

Annual Report
of
Accomplishments and Results
2002

Lavon L. Bartel, Dean and Director



Table of Contents

Section A	1
Planned Programs	1
CSREES Goal 1	2
Executive Summary	2
Source of Funding.....	5
Consolidated Plan of Work Performance Goals 1-1 through 1-3	5
Selected Program Accomplishments Corresponding to Key Themes	7
CSREES Goal 2	9
Executive Summary	9
Source of Funding.....	10
Consolidated Plan of Work Performance Goals 2-1 through 2-5	10
Selected Program Accomplishment Corresponding to Key Themes.....	13
CSREES Goal 3	14
Executive Summary	14
Source of Funding.....	16
Consolidated Plan of Work Performance Goals 3-1 through 3-5	16
Selected Program Accomplishments Corresponding to Key Themes	18
CSREES Goal 4	20
Executive Summary	20
Source of Funding.....	24
Consolidated Plan of Work Performance Goals 4-1 through 4-11	24
Selected Program Accomplishments Corresponding to Key Themes	30
CSREES Goal 5	36
Executive Summary	36
Source of Funding.....	40
Consolidated Plan of Work Performance Goals 5-1 through 5-16.....	40
Selected Program Accomplishments Corresponding to Key Themes	46
Section B	53
Stakeholder Input Process.....	53
Section C	63
Program Review Process	63
Section D	63
Evaluation of Multistate, Multi-Institutional, Multidisciplinary and Joint Research and Extension Activities	63
Section E	71
Integrated Research and Extension Activities: Multi-state.....	71
Section F	72
Integrated Research and Extension Activities: Integrated	72

Section A
Planned Programs

Goal 1

An Agricultural System That is Highly Competitive in the Global Economy

Goal 2

A Safe and Secure Food and Fiber System

Goal 3

A Healthy, Well-Nourished Population

Goal 4

Greater Harmony Between Agriculture and the Environment

Goal 5

Enhanced Economic Opportunity and Quality of Life for All Americans

CSREES Goal 1

An Agricultural System That is Highly Competitive in the Global Economy

Executive Summary

Agriculture

The University of Maine Cooperative Extension (UMCE) has worked to foster knowledge and skills for agricultural producers throughout the state, in traditional and new ways. Our current Plan of Work cycle has matured as we continue to deliver planned programs to Maine's agri-industry, and implement new ones in response to new issues, information and research, promising continued positive results for producers. Our agricultural and natural resource-based programs have helped producers continue to develop and implement strategies that achieve their goals and improve the long-term viability of agriculture. During the past year, UMCE delivered over 190 workshops and events to more than 6,500 people, and provided more than 2,700 individual consultations in support of a competitive agricultural system.

This year, water quality and crops specialists created a multi-state potato school, bringing their combined expertise to Maine potato growers and other regional Extension programs. In response to concerns about the previous year's low rainfall, UMCE sponsored an irrigation symposium to help growers prepare for anticipated drought conditions in the upcoming growing season. We have also begun to interact with horse owners and potential horse owners through a recently developed equine education program. Due to very recent changes in the state's demographics—specifically an influx of Somali immigrants—UMCE is working with existing livestock operations to respond to a new market demand for goat meat and other specialty products. We are educating producers about new animal husbandry standards that can be used to quantify the level of care being given to their livestock. Individual producers will use this information to reach higher value markets. Research continues to provide a genetic base for more profitable production of lamb in the *Katahdin Hair Sheep Project*. We also participated in the formation of the Maine Alternative Poultry Association to help promote the positive growth of small scale poultry production in our state.

An important new initiative for UMCE in support of Maine livestock producers was our role in the formation of the Maine Cattle Health Assurance Program (MeCHAP). In the spring of 2000, in cooperation with the Maine Department of Agriculture, Food and Rural Resources; dairy processors and handlers; practicing veterinarians; and dairy producers MeCHAP was created. MeCHAP is addressing challenging public and animal health concerns through annual biosecurity audits and modularized disease assessments. MeCHAP has trained 40 large animal veterinarians in conducting on-farm risk assessment and prioritizing farm health risks. Approximately 30 farms have completed a core assessment with more in process, and a serological survey of Johne's Disease in Maine dairy cows and slaughtered beef is underway. Additional program modules will focus on specific diseases such as mastitis, bovine viral diarrhea and salmonella. This work has been supported with a blend of Federal, UMaine and external funding.

UMCE and the Maine Agricultural and Forest Experiment Station operate Maine's Animal Diagnostic Laboratory to support livestock producers and food industries in Maine. Our veterinarian works closely with counterparts in Maine's Department of Agriculture, Food and Rural Resources, and the Animal and Plant Health Inspection Service to monitor animal health and quality assurance programs and to provide early detection of exotic and endemic diseases for veterinarians, animal health professionals, farmers, animal health officials and animal welfare authorities. During 2002, over 13,000 specimens were received and more than 14,500 tests run for clients from throughout Maine.

UMCE supports services and strategies to help farms operate efficiently and profitably through programs such as the *Maine Hay Directory*, which facilitates trade in the forage industry and links buyers with sellers. The program is serving a critical need during the current low inventories resulting from last year's drought and armyworm infestation. We support dairy operations through the *Relief Milker Program*, where we maintain a directory of temporary laborers who have completed training through UMCE. Relief milkers can assist dairy farmers during busy times and vacations, or in the event of illness or medical appointments. We support niche market and value-added strategies for both pork and beef producers, through certification trainings for the National Pork Producers Council *Pork Quality Assurance* program, and through the Wolfe's Neck Farm Foundation all-natural branded beef program.

Support for sustainable farms in Maine continued in 2002 with the *Farms for the Future* program, a partnership between UMCE; the Maine Department of Agriculture, Food and Rural Resources; the Natural Resources Conservation Service; and Coastal Enterprises Incorporated, a nonprofit financial intermediary. The statewide program is designed to improve farm profitability and help farmers resist increasing pressure to sell property for development. In exchange for a five- or ten-year conservation easement, farm owners get intense team-style assistance in developing new business plans for their operation, and become eligible to apply for up to \$25,000 in grant funds to implement their plans. Phase one of the program is complete, with 15 farms accepted and 1,472 acres in conservation easements. Phase two is beginning.

Maine has an aging farmer population, with many farmers near or even past traditional retirement age. With this in mind, UMCE and Maine Agricultural Center partnered with the Maine Department of Agriculture, Food and Rural Resources and the Maine Organic Farmers and Gardeners Association to determine how to match farmers wishing to leave farming with new farmers wishing to start. The resulting *FarmLink* program, with partial funding by Maine Farmland Trust, has a database of farmland available to potential farmers and is beginning the process of matching land with new farmers. UMCE has also provided workshop and resource assistance to potential new farmers in a program called *So You Want to Farm in Maine*.

UMCE cooperated with the other five New England states, New York and the New England Vegetable & Berry Growers Association to develop the 2001 *New England*

Vegetable and Berry Conference. More than 105 agriculturally oriented companies participated in a farm trade and equipment exhibition and more than 120 educational sessions were presented to over 1,400 people on profitability strategies, pest management, varieties, marketing and soil management over the three days of the conference.

Maine apple producers are benefiting from applied research being conducted at the Maine Agricultural and Forest Experiment Station's Highmoor Farm. UMCE and Experiment Station researchers are working to provide economically viable alternatives to traditional soft apple varieties such as *Macintosh* and *Cortland* which have been popular in the past but are losing market share to varieties with better storage characteristics. Preliminary results indicate that *Honey Crisp* and *Gala* varieties grow well in Maine and offer growers varieties that store well and have wide consumer acceptance.

UMCE is working with potato farmers to develop a value added rotational crop to use in Maine. Applied research partnerships with several growers is determining which varieties of canola will thrive in Maine's northern climate. An emphasis is being placed on non-genetically modified seed which can produce a crop that demands a premium price in the marketplace. A UMCE faculty member is leading this effort and continued use of this rotational crop is expected in the future.

In November 2001, UMCE participated in an international trade mission to Japan to gain an understanding of the export potential for New England ornamental plants in an effort to solidify new markets for producers; and in July hosted 10 Japanese business people in a return mission to New England. The effort has produced potential for both import and export between the two countries, some of which has already been realized: one retailer has begun to export bare-root plants to Japan, and another has begun importing Japanese tree peonies.

New research projects underway in agriculture and horticulture identify and analyze emerging techniques and technologies. Food processing waste is being evaluated as a potential source of soluble nitrogen for organic vegetable production in replicated trials at Maine Agricultural and Forest Experiment Station's Highmoor Farm. UMCE is working on Maine Agricultural Center funded projects to define commercial opportunities for propagating woody plant species native to Maine, and to evaluate varieties of pickling cucumbers. As part of our new equine education program UMCE is evaluating wood pellets as bedding for horses. We are participating in two Sustainable Agriculture Research and Extension funded projects, one on methods of reintegrating crop and livestock enterprises in northern states, and another researching the diversity and intensity of cover crop systems.

Source of Funding

Performance Goal	FTE Days	Smith/Lever [b] & [c]	Smith/Lever [d]	State Funds	Total Funding per Performance Goal
Goal 1 Total	1,486	\$158,956	\$40,193	\$158,956	\$358,105

Consolidated Plan of Work Performance Goals 1-1 through 1-3

OUTCOME INDICATORS: Behaviors and Impacts

	Total Days:	1,486
Agricultural producers will practice resource conservation methods.		468
Agricultural producers will participate in community management initiatives.		0
Community members will teach others about marine resource issues.		0
Community groups will initiate marine resources conservation strategies.		0
Crop and livestock producers will increase integration of operations.		97
Producers will adopt alternative crops to reduce pesticide inputs, increase rotation length and increase soil organic matter.		679
Producers will use new technologies.		868
Producers will adopt sustainable animal husbandry practices.		393
Small farms will diversify.		426
Producers will evaluate soil health.		200
Farmers will implement sustainable agricultural practices.		2,170
Greenhouse industry will organize liaison group to speak on behalf of entire industry and conduct industry-wide projects.		1
Maine green industry members who attend New England Greenhouse Conference will increase by 10 percent each conference.		0
50 percent of growers consulted with one-on-one will implement sustainable techniques based on consultation.		476
General public will understand and support production agriculture.		2,343
Potato harvesters will screen for bruise damage, which will result in improved harvesting operations (individual machines).		0
Potato harvester bruise levels will be reduced by 10 percent.		0
Farmers will develop new markets.		920
Farmers will develop new agricultural products.		694
Farmers will implement farm management skills.		1,336
Individuals will be trained to be more productive and knowledgeable farm employees.		343

Small-scale producers will make changes as a result of UMCE programs.	686
Producers will form management teams.	48
Producers will identify yield-limiting factors.	327
Producers will use futures/options markets.	0
Agricultural producers will diversify crop production (acres).	794
Producers will attend an intensive potato storage, design and management course.	0
Percent of potato harvester injuries reduced from baseline 119 (1988).	0
Youth will demonstrate sustainable agricultural practices.	15
Youth will demonstrate an understanding of the basic scientific principles that affect sustainable agriculture.	69

OUTPUT INDICATORS

Number of consultations.	2,777
Number of workshops/events.	191
Number of people attending the workshops/events.	6,582
Number of groups formed (ad hoc or formally organized).	63
Number of people involved in groups formed.	432
Number of volunteers trained.	50
Number of publications written.	9
Number of publications distributed.	32,094
Number of issues of newsletters written.	80
Number of people receiving newsletters within a year's time.	4,211
Number of audio visual resources developed (video, slides, displays).	37
Number of articles in news media.	38
Number of 1-hr radio programs delivered.	0
Circulation of articles in news media.	1,242,700

Selected Program Accomplishments Corresponding to Key Themes

Key Themes: Agricultural Profitability, Risk Management

Wild Blueberry Management: Maine's wild blueberry crop has an average annual value of \$75 million dollars. Research indicates that mummy berry disease can cause between 28 and 36 percent loss to the crop if the disease is left unchecked. Maine growers have received an EPA exemption to use the fungicide Orbit[®] to control the disease and UMCE has helped to define Best Management Practices for its use through a fact sheet available as part of the *Wild Blueberry Growers Guide* and online.

Summary of Impacts: The Maine Board of Pesticides Control survey of Orbit[®] use in wild blueberry production in Maine indicated a 50 percent reduction in use of this fungicide in 2001 as compared to 2000. Wild blueberry growers are using Best Management Practices information to limit treatments, resulting in reduction of input costs, increased efficiency of production and minimized fungicide in the environment. It is estimated that the resulting savings are approximately \$750,000 over calendar basis application.

Scope of Impacts: State Specific

Key Themes: Adding Value to New and Old Agricultural Products, Niche Marketing, Sustainable Agriculture, Agricultural Profitability

Developing New Markets for Maine Beef Producers: Maine beef producers have been unable to expand beyond the freezer beef trade due to a lack of processing availability. The Wolfe's Neck Farm Foundation, working with the Maine Department of Agriculture, Food and Rural Resources and UMCE, has developed a branded beef program to enable Maine beef producers to process and market their product as naturally raised. UMCE provides support to producers by sorting cattle to meet quality grade standards, assisting with feed and ration development, and providing educational resources for herd health and management.

Summary of Impacts: The Wolfe's Neck Natural Beef program continues to expand, bringing benefits to Maine producers and supporting infrastructure. During the past year over 3,000 head of USDA choice grade cattle completed the program, bringing average commodity prices to the cattle feeders of \$142.05 per head above the freezer beef market, and earning feedlot operators an additional \$426,000. Producers in the cow-calf sector realized another of the direct benefits of the natural beef program with an additional sales price average of 9 percent per pound.

Scope of Impacts: State Specific

Key Themes: Managing Change in Agriculture, Small Farm Viability, Agricultural Profitability

Working Landscapes: UMCE, in partnership with the nonprofit Coastal Enterprise Group's Maine Farms Project created the Working Landscapes Project to give focused technical assistance to farmers in the lower Kennebec Valley. The goal of the project is to increase agricultural viability, promoting sustainable communities by maintaining a diverse landscape and economy. Sustainable

agricultural practices benefit communities by improving the environment and providing access to healthier food sources. Twenty-seven farms have received focused technical assistance through the project with 70 farms receiving general assistance. The project was partially funded by a grant from the U.S. Environmental Protection Agency.

Summary of Impacts: The Working Landscapes project has created four integrated farm demonstration sites resulting in 215 new acres in farmland production and \$320,600 in new farm products grown, 54 percent of which were sold locally. Farms reported between five and 20 percent increase in net profit and four farms, representing 1,680 acres and 200 dairy cows, have converted to organic production.

Scope of Impacts: State Specific

Key Themes: Ornamentals/Green Agriculture, Urban Gardening, Invasive Species

Ornamental Horticulture: Greenhouse growers and perennial plant professionals need to keep abreast of knowledge of plant disease management, growing media management, marketing techniques and work force management techniques to remain viable. UMCE and the Maine State Florist and Growers co-produced a greenhouse growers educational program attended by 133 members to address these issues.

Landscaping ideas using new and native plants are the basis of increased purchases by the gardening public. Use of native plants will reduce pesticide needs, discourage invasive plant spread and help manage erosion. Field days, demonstrations and research trials were conducted by UMCE at the University of Maine Experiment Station Rogers Farm for ornamental horticulture professionals focusing on uniquely adapted native plants for use in Maine landscapes.

Approximately 40,000 copies of *Gardening to Conserve Maine's Native Landscape* have been distributed to Maine gardeners, along with a resource guide that includes 75 nurseries now selling native plants, up from 66 in 2000.

Summary of Impacts: Survey data from greenhouse grower educational programs and field days indicates that producers in attendance experienced a potential positive impact on the industry of over \$614,000 in cost savings, increased sales, and perceived benefits of creative marketing.

Scope of Impacts: State Specific

CSREES Goal 2 A Safe and Secure Food and Fiber System

Executive Summary

Food Safety and Food Security

UMCE's Food Safety Program is working to ensure safe food handling and production in homes and within processing industries. We deliver food safety knowledge and skills through educational workshops, consultations and distribution of published material, resulting in a safer and more secure food system for Maine citizens. During 2002 we worked directly with over 1,400 Maine residents through workshops and events, and reached over 11,000 through newsletters and publications.

Our work in food safety reaches citizens of all ages. UMCE participated in the *Kids Eat Smart* program, teaching children and their teachers increased awareness of food safety, kitchen safety and choosing and preparing healthy snacks. The program is funded by the Maine Nutrition Network through the Healthy Acadia Coalition, a coalition of health care and education organizations working to promote health, well-being and quality of life. The three-part series was directed at youngsters in multiple age groups, as well as staff from childcare and after-school programs.

Our programs also directly benefits teens by addressing the current realities of teen lifestyles. Teens are often left on their own to select, store and prepare the foods they eat without adequate knowledge of safe handling. Food safety and nutrition displays have been produced and circulated that teach safe ways to warm and store pizza, thaw frozen prepared foods and hamburger, and pack school lunches. Other displays provide facts about fast food and the amount of fat, salt and sugar in popular foods. In one Maine region we conduct a summer nutrition day camp where campers are taught lessons on proper food handling, the value of washing their hands before preparing food and proper storage techniques. Evaluations reveal that the participants are taking their knowledge home and insisting on safe practices among family members.

UMCE is providing food safety education to senior citizens as part of our *Maine Family Nutrition Program*, *Senior FarmShare* and *Senior Companion* programs. Our senior companion volunteers attend training sessions that teach safety guidelines for use at home and at traditional senior citizen events, such as picnics and community suppers. Nutrition aides present food safety demonstrations to low-income EFNEP clients and Senior FarmShare participants to teach safe preparation of fruits and vegetables

We routinely encounter consumers who are not following USDA's recommendations for safely preserving food. Our workshops on food preservation include an overview of food preservation recommendations; a complete packet of food preservation guidelines, recommendations and recipes; and an opportunity to calibrate gauges on pressure canning equipment. Participants leave armed with new knowledge and reference materials to help them follow safe food preservation practices in the future. We also inform the general

public about safe food preservation practices through displays that feature the USDA national initiatives *Food Safety From Farm To Table* and *Fight BAC*®. Our displays have been seen by thousands at local retailers. In the summer of 2002 Maine experienced its first case of *botulism* poisoning in twenty years. The cause of this outbreak was improperly processed home-canned food. UMCE responded by offering educational sessions and publications to a citizenry that was receptive to preventing food borne illnesses.

UMCE continues to help small business clients develop new and specialty processed food products. This year we worked with a customer to safely develop a low-carbohydrate apple pie for diabetics and people following low-carbohydrate diets. The product has been test marketed successfully and large-scale production begun. We have also worked with a client to develop safe and appropriate packaging of specialty products for ethnic markets.

Source of Funding

Performance Goal	FTE Days	Smith/Lever [b] & [c]	Smith/Lever [d]	State Funds	Total Funding per Performance Goal
Goal 2 Total	172	\$18,345	\$0	\$18,345	\$36,690

Consolidated Plan of Work Performance Goals 2-1 through 2-5

OUTCOME INDICATORS: Behaviors and Impacts

	Total Days:
Residents will adopt proper techniques for planning and purchasing of food.	172
Residents will adopt proper techniques for transporting food.	262
Residents will adopt proper techniques for storing food (method and temperature).	238
Residents will practice personal hygiene techniques related to food safety.	327
Residents will adopt proper thawing methods.	281
Residents will adopt proper cooking times and temperatures.	271
Residents will adopt proper techniques for holding and serving of food.	283
Residents will adopt proper procedures for cleaning and sanitizing work areas and equipment.	258
People will be making sound choices regarding food selection and purchasing.	261
People will be making sound choices regarding food safety labels on meat and poultry.	408
People will be making sound choices regarding proper thawing methods.	213
	346

People will be making sound choices regarding proper food cooking, holding and serving procedures.	292
Consumers will adopt Extension recommendations for canning.	1,241
Consumers will adopt Extension recommendations for freezing.	566
Consumers will adopt Extension recommendations for drying.	57
Participants will reduce the risk of chemical contamination of food by following the residue avoidance program.	0
Participants will reduce the risk of chemical contamination of food by following the IPM program.	15
Participants will reduce the risk of chemical contamination of food by following the salmonella reduction program.	0
Participants will reduce the risk of chemical contamination of food by following the completing milk and dairy beef drug prevention protocol.	2
Participants will reduce the risk of microbiological contamination of food by understanding the principles of HACCP.	6
Participants will reduce the risk of microbiological contamination of food by using microbiological reduction program.	6
Participants will reduce the risk of microbiological contamination of food by implementing a sanitation program.	6
Participants will reduce the risk of microbiological contamination of food by implementing a routine testing/monitoring procedure.	0
Participants will reduce the risk of physical contamination of food by implementing a quality control program.	0
Consumers will adopt proper practices in planning for and purchasing of food.	24
Consumers will adopt proper practices in transporting food.	9
Consumers will adopt proper practices in food storage (method and temperature).	24
Consumers will adopt proper practices in personal hygiene.	30
Consumers will adopt proper practices in thawing frozen foods.	53

OUTPUT INDICATORS

Number of consultations	563
Number of workshops/events	42
Number of people attending the workshops/events	1,445
Number of groups formed (ad hoc or formally organized)	0
Number of people involved in groups formed	0
Number of volunteers trained	90
Number of publications written	56
Number of publications distributed	5,162
Number of issues of newsletters written	12

Number of people receiving newsletters within a year's time	6,691
Number of audio visual resources developed (video, slides, displays)	7
Number of articles in news media	10
Number of 1-hour radio programs delivered	0
Circulation of articles in news media	0
Displays/exhibits	8
Times displays seen	32
Families receiving lessons	18
Frequency of workshops/events / year	23
Home visits by nutrition aides	856
Lessons taught	4
Phone inquiries	66
Web pages created	0
Web pages designed	0

Selected Program Accomplishment Corresponding to Key Themes

Key Themes: HACCP, Food Handling, Food Safety, Food-Borne Pathogen Protection

Seafood Hazard Analysis Critical Control Point (HACCP): UMCE is a working partner of the Northern New England Seafood Alliance (NNESA). The alliance was formed in 1996 to provide processing standards that would reduce the risk of microbiological contamination for seafood processors. Training is accomplished through three-day HACCP and Standard Sanitation Operating Procedures (SSOP) workshops. NNESA partners include the U.S. Food and Drug Administration; the Maine Department of Agriculture, Food and Rural Resources; the Maine Department of Marine Resources; the Maine Sardine Council; and representatives from the seafood processing industry.

Summary of Impacts: Since its inception, NNESA has offered courses throughout New England, certifying over 600 seafood processors in HACCP and SSOP principles. Thirty-two workshops have been conducted in Maine. Pre- and post-HACCP evaluations were conducted: the Maine Department of Agriculture, Food and Rural Resources evaluated home-based processors and the U.S. Food and Drug Administration evaluated processing plants. The evaluations showed that 12 to 18 percent of samples of ready-to-eat crabmeat were contaminated with *Listeria Monocytogenes* before HACCP and zero percent after HACCP.

Scope of Impacts: ME, NH, VT, MA, CT, RI, NY, Canada, Jamaica

CSREES Goal 3 A Healthy, Well-Nourished Population

Executive Summary

Nutrition and Health

UMCE delivered general health and nutrition education programs to nearly 25,000 Maine citizens during 2002 in an effort to improve diets, encourage healthful life habits, improve the quality of food and lower the risk of chronic disease. Over 50,000 publications and newsletters were distributed; more than 380 workshops were conducted; and over 3,400 individual consultations and home visits brought research-based information to the general public as well as low-income and special needs audiences.

Many residents of Maine suffer from chronic disease. Higher than normal risk of some diseases has been documented in Maine's rural counties. In northeastern Maine, one in five adults have been diagnosed with diabetes, high blood pressure, high cholesterol, heart disease, cancer, arthritis, asthma, depression, obesity, substance abuse or mental illness. Poor eating habits, lack of physical activity and tobacco use are associated with the development of chronic illnesses. In Maine, 56 percent of adults are overweight or obese. Maine ranks third in the nation in the number of persons diagnosed with high blood cholesterol, a risk factor for chronic disease. As with obesity, the increase in the incidence of diabetes is disturbing, particularly since the increase is a documented trend in children. This year UMCE presented workshops to volunteers and the general public on the effects of tobacco on the body and techniques for quitting smoking. We also worked with regional health care providers to present a health and wellness conference, where student-aged TEACH (Tobacco-free Education and Action Coalition for Health) team members conducted 21 workshops that focused on nutrition; fitness; tobacco, alcohol and drug avoidance; stress management; mental health disorders; alternative medicine; aspirations and goal setting; and general health topics. UMCE also participated in a coalition to implement *Move and Improve*, a 12-week statewide program to increase physical activity for individuals of all ages, and conducted *Dining with Diabetes* workshops to help participants prevent and manage diabetes and improve their health. UMCE joined an interagency group of healthcare, educational and governmental organizations, lead by the Maine Center for Public Health, to present a conference for health-related professionals titled *Preventing Childhood Obesity: The "Skinny" on Soda and T.V.*, which focused on lifestyle habits contributing to excess weight in children. Public health pediatricians, school personnel and Harvard University researchers energized the participants to increase efforts to improve the health status of Maine children. In a related program, UMCE educators and nutrition paraprofessionals teamed up to successfully integrate youth development, nutrition and healthy living programs into rural community day camp curriculums.

UMCE staff and Master Gardener volunteers coordinated the 2002 Maine *Plant a Row for the Hungry* program. Participants produced and gleaned over 50,000 pounds of

produce valued at over \$85,000. The produce was donated to local food pantries and soup kitchens to feed the homeless and hungry.

Maine's Limited Income Nutrition Education (LINE) programs include the *Expanded Food and Nutrition Education Program* and the *Maine Family Nutrition Education Program*. Extension's nutrition aides delivered food and nutrition information and taught food budgeting, buying and preparation skills to 2,028 families and 4,382 individuals in all counties of the state. In addition, 7,554 preschool through high school youth received basic nutrition information as participants in LINE school programs. The program was supported by 967 volunteers, who assisted the nutrition aides in delivering lessons throughout the state.

UMCE is addressing the health and nutritional challenges of our aging population through programs that emphasize healthy meals, healthy snacks and healthy lifestyles. Seniors tend to consume fewer calories than younger people due in part, to the natural decline in the metabolic rate that occurs with age and decreased physical activity. If calorie intake becomes too low, then intake of necessary nutrients may also become too low. Our programs such as *Food Preparation Across the Lifespan* and *Quick and Healthy Snacks* teach healthy food selection and preparation to meet the special needs of seniors who may live alone, be physically impaired or have specific dietary needs.

UMCE is an active partner with the Maine Department of Agriculture, Food and Rural Resources in the implementation of the Senior FarmShare program. Senior FarmShare is a federally funded program that provides eligible low-income seniors with vouchers to buy fruits and vegetables that are produced by farmers in Maine. In 2002 the program provided over \$500,000 in income to Maine farmers and resulted in low-income seniors consuming fresh fruits and vegetables that would be unaffordable without this program. UMCE also provided nutrition and preparation education to seniors on how to use the produce.

UMCE helps senior citizens maximize their independence through the Senior Companion Program, which recruits, trains and places senior volunteers with older adults who can benefit from their companionship. This year we worked with nearly 2,000 volunteers and seniors. We presented a six-part elder caregiver series for potential caregivers taught in partnership with the Maine Department of Human Services, the Maine Bureau of Health and others.

During 2002, UMCE joined a team that initiated the *Senior College at the Hutchinson Center* in which volunteer faculty offer eight-week courses for seniors. Academic courses, field trips, musical and dramatic presentations and other special events are offered as well. The college has expanded this year and is now serving over 400 seniors.

UMCE is participating in a three-year model community project for food self-reliance in Bowdoinham - a rural, agricultural Maine town. The program conducts agriculture education programs in the schools and community, establishes innovative linkages to

support locally grown foods and supports a community farmers’ market. The program included the following activities:

- An in-school visiting farmer program in which four local producers—an organic vegetable farmer, a chicken/egg farmer, a maple syrup producer and a beekeeper—visited the Bowdoinham Community school.
- Two educators from UMCE provided teacher training in the *Food, Land & People* curriculum to 10 teachers and administrators. The curriculum includes activities and resources for learning about food, fiber and land use.
- Participation in the youth garden program has increased. Enough spinach, salad greens, garlic and arugula were produced for the children to sell at the local farmers’ market.
- Gardening opportunities were provided for low-income seniors through the distribution of patio tomato and green pepper seedlings at a local low-income senior housing complex.
- Community classes on gardening, composting, food preservation, water conservation, worm composting and landscape design were offered.
- Local stores and restaurants were shown how to promote, sell and feature locally produced food. Local green beans, fiddleheads, strawberries, blueberries and peas were sold at the local grocery store and bread from a local bakery was sold at the local restaurant.

Source of Funding

Performance Goal	FTE Days	Smith/Lever [b] & [c]	Smith/Lever [d]	State Funds	Total Funding per Performance Goal
Goal 3 Total	2,058	\$220,142	\$405,605	\$220,142	\$845,889

Consolidated Plan of Work Performance Goals 3-1 through 3-5

OUTCOME INDICATORS: Behaviors and Impacts

	Total Days:
Groups will be established to conduct community programs to reduce the risk of disease.	2,058
Participants will decrease saturated fat and total fat intake.	35
Participants will engage in community programs that enhance the health of seniors and other community members.	1,333
Participants will improve nutrient and food composition intake to lower the risk of disease.	3,058
Participants will increase food preparation skills.	1,773
Participants will increase food-buying skills.	2,183
Participants will increase intake of fruits and vegetables.	1,972
	2,227

Participants will increase physical activity.	2,072
Participants will take steps to achieve and maintain healthy weight	1,493
Participants, at all life stages, will have knowledge, skills and ability to be well nourished.	4,414
People will be involved in public policy issues related to food recovery.	22
People will increase their food recovery, gleaning and donations of food to food pantries.	77
People will increase their food supply from gardens and home production.	30
People will participate in programs organized to raise awareness about hunger and poverty at the community level.	96
Pounds of food donated to food pantries, food banks and kitchens	6,105
Super Cupboards will be organized.	0
Value of food donated to food pantries, food banks and kitchens	2,500

OUTPUT INDICATORS

Number of consultations/home visits.	3,468
Number of workshops/events.	381
Number of people attending the workshops/events.	21,462
Number of groups formed (ad hoc or formally organized).	49
Number of people involved in groups formed.	820
Number of volunteers trained.	912
Number of publications written.	5
Number of publications distributed.	31,673
Number of issues of newsletters written.	54
Number of people receiving newsletters within a year's time.	18,826
Number of audio visual resources developed (video, slides, displays).	8
Number of articles in news media.	37
Circulation of articles in news media.	285,970

Selected Program Accomplishments Corresponding to Key Themes

Key Themes: Human Health, Human Nutrition, Teen Pregnancy, Children, Youth and Families at Risk, Smoking Cessation, Substance Abuse

Healthy Infants: Smoking adversely affects the health and development of the fetuses of pregnant women. Smoking is the single largest modifiable risk factor in intrauterine growth retardation; it doubles the incidence of miscarriages and stillbirths, and increases incidence of life-threatening pregnancy to the mother. Mothers who smoke one pack a day during pregnancy have an 85 percent increased risk of having a child with mental retardation. Children who breathe secondhand smoke have more ear infections and are more likely to suffer from pneumonia, bronchitis, asthma and other lung diseases. UMCE's Knox County parenting education program supports teen and first time mothers during pregnancy, and through the first five years of their child's life. Parent educators continue to teach parents about the potential harm of secondhand smoke to unborn babies and young children and support parents in quitting or reducing their smoking habit.

Summary of Impacts: Of the fifty-eight enrolled mothers, 33 percent smoked prior to pregnancy. As a result of the smoking education component of our parenting education program, 74 percent of smoking mothers reduced their smoking, with 21 percent quitting completely during pregnancy.

Scope of Impacts: State Specific

Key Themes: Human Health, Children, Youth and Families at Risk

Physical Fitness and Activity: It is estimated that thirty-five percent of Maine youth between the ages of 6 and 17 are overweight. The results of the U.S. Centers for Disease Control and Prevention's *Maine Youth Risk Behavior Survey* (1997) indicated that over 38 percent of respondents had not exercised or participated in aerobic activity on three or more of the past seven days. UMCE, in partnership with local schools and MBNA America Bank, offers *Food, Fitness and Fun*, a multi-part program for youth between the ages of 5 and 13. The program builds awareness that enables young people to make informed decisions on healthier life styles at an earlier age. A variety of formats are offered for these school enrichment programs, ranging from one 45-minute session to eight 30-minute sessions.

Summary of Impacts: Participants report that they became more aware of healthy snack options and the importance of regular exercise in a total health plan, and had increased their activity by 90 minutes per week for eight weeks—50 percent more than they had committed to.

Scope of Impacts: State Specific

Key Themes: Human Health, Human Nutrition, Disease Prevention, Wellness, Physical Activity, Community Collaboration

Move & Improve: Over half of our population lives sedentary, physically inactive lifestyles that increase their risk of chronic disease. *Move and Improve* is a 12-week program that encourages individuals of all ages to stay physically active by

committing to prolonged physical activity for a defined period of time. UMCE staff chaired the nutrition committee of the statewide *Move and Improve* organizational coalition. This year's annual health exposition included workshops, demonstrations, dancing, active games and health screenings for osteoporosis, cholesterol, fitness and body mass index. UMCE developed educational exhibits and workshops focused on nutrition, physical activity and food safety. During the 12-week program we also published three *Move and Improve* features in the Bangor Daily News, reaching an estimated 74,000 homes.

Summary of Impacts: Nearly 6,000 Maine citizens completed the 12-week program by becoming physically active for 30 minutes a day for at least four days a week. Medical research shows that this degree of physical activity can reduce the risk of heart attack by reducing "bad" cholesterol; help prevent osteoporosis by keeping calcium in the bones; reduce mood swings and relieve depression by releasing endorphins in the brain; and help manage weight by burning calories.

Scope of Impacts: State Specific

Key Themes(s): Human Health, Human Nutrition, Food Recovery/Gleaning, Food Security, Food Accessibility and Affordability

Welfare Simulation—Understanding the Experience of Poverty: There continues to be an increasing income gap in Maine. UMCE is the lead agency in a series of *Welfare Simulation* programs designed to raise participants' awareness of the experience of poverty. The program is delivered both directly and as a train-the-trainer program, and teaches people to be less judgmental and more patient with those that live in poverty. Ninety-six people participated in the program this year.

Summary of Impacts: Evaluations show that the majority of participants demonstrate a better understanding of poverty and related issues—specifically, how it feels to live in a low-income family trying to survive month to month. Participants indicated an increased ability to participate in policy issues related to food recovery.

Scope of Impacts: State Specific

CSREES Goal 4 Greater Harmony Between Agriculture and the Environment

Executive Summary

This year UMCE conducted Integrated Pest Management (IPM) programs for producers of Maine's most important crops, including potatoes, sweet corn, blueberries, cranberries and fruit; as well as for greenhouse operators and homeowners. We are currently expanding our program to include soybeans and canola. We disseminated information to growers through field days, workshops and consultations, and made current information available through scouting reports, hotline postings, Web sites and fact sheets. During 2002, over 480,000 copies of our pest management fact sheets were downloaded from our IPM Web site.

Crops and Pest Management

A significant issue for potato producers was the detection of the Mop Top Potato Virus (MTPV) in Maine during the 2002 growing season. When the outbreak was detected, MTPV was listed as a disease that is subject to quarantine, creating potential for a significant negative impact of over \$50 million, or more, on those effected. UMCE worked with the Maine Agricultural and Forest Experiment Station, the Maine Potato Board and the Animal and Plant Inspection Service of the USDA to understand the impact of the situation and to educate growers about the disease and its symptoms. By season's end it had been determined that the virus was wide-spread in other states and Canada, and that the two countries would create a management plan to address the virus and lift the quarantine.

For 2002 potatoes were the top agricultural commodity in Maine. Our potato IPM program annually impacts nearly 65,000 acres of potatoes, with on-site environmental monitoring by 26 seasonal program aides and field scouts, and 150 strategically located small weather stations. The data produced helps IPM scientists predict the potential for pest and disease outbreaks and provides growers with current information on specific, timely treatments that minimize the number of pesticide applications and maximize potato yield.

New this year, IPM workshops for greenhouse operators were conducted in Maine, New Hampshire and Vermont. The programs introduced IPM concepts and provided an opportunity for greenhouse growers to actively learn by hands-on scouting and one-on-one discussions with our IPM scientists. A full-season application of IPM principles is beginning with upcoming greenhouse crop rotations and will be evaluated for success as new data becomes available.

Our pest management scientists are working with the Maine Department of Agriculture, Food and Rural Resources to help Maine public schools design and implement an IPM program that will minimize the pesticide exposure of school children, staff and the public on school properties. Our pest management scientists are involved in on-site IPM training sessions for maintenance personnel at two pilot schools, and work as part of a Maine,

New Hampshire and Vermont tri-state initiative to accomplish the same in all three states. To support the effort, a publication titled *Outdoor Integrated Pest Management for Schools* was developed and will be distributed to all school districts and individual school properties.

The Maine Board of Pesticides Control is partnering with UMCE on a fundamentally new way for cranberry growers to earn the pesticide recertification credits they need to maintain their pesticide application license. UMCE has developed a series of online workshops through which growers can earn credits by completing lesson tutorials and questions. The results are sent to the Maine Board of Pesticides Control for grading and credit, saving growers from investing nonproductive travel time in the process.

Aquaculture

Aquaculture generates approximately \$100 million in annual revenues for Maine's economy. Of the variety of farmed fish and shellfish, Atlantic salmon is the most important aquaculture crop. However, intensive salmon farming in coastal marine waters exposes farmed salmon to pathogens and parasites harbored within the marine ecosystem, and intensive farming practices pose a potential risk back to the environment. Over the last several years we have delivered workshops for aquaculturists and conducted applied research on Atlantic salmon infected with sea lice. We have worked with farm personnel to monitor sea lice infestations on over 60,000 salmon. Resulting data has helped fine-tune IPM procedures and define the most appropriate times for treatment. As a result, treatments have been reduced, and sea lice infestation is at its lowest level since the inception of our program. In previous years, economic losses due to sea lice infestation were estimated at between three and ten percent of production cost. Infection estimates for this year are well below one percent, resulting in an industry savings of the more than \$2 million.

Agricultural Composting

UMCE's Compost School addressed the need for agricultural composting facilities resulting from nutrient management legislation, and in the process helped agricultural producers develop a secondary income stream. This year 40 agricultural producers from seven states completed UMCE's agricultural composting school, and 30 new agricultural composting facilities were established by Compost School graduates. We have trained municipal and state government employees and private operators to become effective composters of large amounts of leaf and yard waste from municipal collections, food waste and organic residuals from waste water processing facilities. This year, 30 municipalities have begun composting and 27 private composting facilities were established with the help of Compost School graduates.

Horticulture

Our home horticulture program teaches Maine citizens to adopt practical, sustainable, research-based horticultural practices. These positive practices have helped improve

home gardening success and increased understanding of environmentally sound practices. During 2002 our efforts included working with Master Gardener volunteers to develop demonstration gardens; participating in the *Plant a Row for the Hungry* campaign; delivering programs and workshops for home gardeners and others; providing problem-solving consultations; developing horticultural therapy projects; and enhancing backyard wildlife habitat.

The Maine Master Gardener program was originally instituted in response to a critical need for research-based horticultural information for both the home gardener and for the emerging green industry in Maine. Now celebrating its twentieth anniversary, the program has improved the horticultural practices of citizens and contributed to positive community development throughout Maine. This year over 17,000 volunteer hours were invested in 237 community projects, all of which were developed and/or run by Master Gardener volunteers. Volunteer efforts attained outcomes as diverse as pest damage assessment for homeowners, gardening for nutrition education at farmer's markets, organizing community gardens, organizing community composting projects, educational television programs and Garden Angels – a program to teach seniors to garden. Thirty-two Master Gardener program graduates started a horticulture-based business during 2002.

Environmental Education

The *Earth Connections* program at Tanglewood 4-H Camp and Learning Center is designed to complement and enhance public classroom curricula by teaching youth about ecosystem principles and environmental issues. Over 46,000 youth and adults have participated in *Earth Connections* since its beginning. This year more than 2,900 students from 25 Maine schools in six counties participated in outdoor programs, learning about our dependence on ecosystems and discovering how a healthy environment is connected to a healthy classroom and community.

Forestry

UMCE forestry education workshops and educational events this year included the Yankee Woodlot Forestry Camp, a weeklong outdoor forestry learning experience that teaches landowners, loggers and land managers forest ecology and woodland management for long-term sustainability. UMCE's wood technologist helped produce a demonstration to evaluate 14 portable sawmills for small and potential lumber producers. The event was attended by an estimated 3,000 spectators and was featured in a special issue of a multinational periodical with readership of 55,000. During 2002, individual consultations were provided to address the specific management needs of over 800 woodlot owners. We taught the basic skills of sawmill operation to new sawyers entering the profession and worked with homeowners and businesses to educate and assess wood-related issues. Two short television programs alerted viewers to the dangers of burning unseasoned firewood and focused on how to dry firewood and determine when wood is sufficiently dried to be safe. We partnered with the Maine Department of Agriculture, Food and Rural Resources and the Vermont Department of Agriculture, Food and

Markets to write and produce a maple syrup quality control manual. The manual has received multistate recognition and is available in hard copy and online. UMCE also worked with the Maine Maple Producers in the writing of a grant that was funded by the Maine Department of Agriculture, Food and Rural Resources for \$25,000 to help promote the sale of Maine maple syrup and to create value added products.

Marine

The natural resource-based economic component of Maine's coast is significant. Coastal communities depend on the continued opportunity to participate in marine resource harvesting and farming. UMCE and Maine Sea Grant work together to administer the Marine Extension Team (MET), which delivers educational programs, facilitates community development projects, and partners to conduct applied research projects in coastal Maine relating to aquaculture, fisheries and ecosystem health. Through strong partnerships and collaborations, the MET helps industry, communities and the general public understand the complex issues and conflicts that threaten fishing and aquaculture sustainability. By bringing a science-based, balanced approach to applied research projects and community discussions, we are able to help communities solve these problems at a local level. In 2002, the MET expanded and strengthened *the Maine Phytoplankton Monitoring* program by engaging aquaculturists in monitoring. The team also strengthened the *Maine Beach Profile Monitoring* program by increasing the use of data for decision-making on beach management. In addition, we developed two new public health programs: *Microbial Source Tracking*, which works to identify sources of contamination in southern Maine estuaries from fecal coliform bacteria that pose a threat to public health; and the *Maine Coastal Swim Beach* program, which enlists volunteers to help monitor for waterborne bacteria that cause illnesses, and educates the public about preventing the spread of recreational water illnesses.

The *Maine Shore Stewards* program was developed to encourage citizens to participate in coastal resource monitoring. A partnership between UMCE, Maine Sea Grant, and several state agencies, the *Maine Shore Stewards* provides important data to decision makers to help solve pollution problems. The MET plays a pivotal role in facilitating and strengthening this process. This year the MET worked with two new groups funded by *Maine Shore Stewards* grants for water quality education, monitoring and pollution control. The Great Works River Group collected data used by Maine's Department of Inland Fisheries and Wildlife to decide whether stocking fish will be feasible in a specific area where sewage treatment plants discharge their effluent into the river at various times during the year. The Mount Desert Island Water Quality Coalition has established an Institute of Environmental Studies, facilitated water monitoring in public schools, and completed a municipal watershed survey in Bar Harbor involving 226 properties.

Through our Watershed Stewards program, UMCE is working in partnership with the Maine Department of Environmental Protection to train Maine residents to identify water pollution sources and determine ways to get them corrected. In return for 20 hours of educational training, our Watershed Stewards return at least 20 hours of volunteer service to their watershed. UMCE also worked with other partners to help develop watershed

coalitions that provide leadership and assistance to organizations promoting the integrated social, economic and ecological importance of their watershed. We undertook several specific watershed issues relating to algae blooms, erosion, declining bird and fish populations and invasive plants.

Source of Funding

Performance Goal	FTE Days	Smith/Lever [b] & [c]	Smith/Lever [d]	State Funds	Total Funding per Performance Goal
Goal 4 Total	6,218	\$665,079	\$157,810	\$665,079	\$1,487,968

Consolidated Plan of Work Performance Goals 4-1 through 4-11

OUTCOME INDICATORS: Behaviors and Impacts

	Total Days:
Agricultural producers will reduce herbicide use with increased use of cultivation, cultural management, band spraying, or lower-rate products.	6,218
Producers will implement pesticide and nutrient Best Management Practices to protect surface water and groundwater systems.	1,072
Management plans will be written as a result of UMCE efforts.	585
Producers will reduce negative impacts of livestock on streams.	316
Producers will adopt testing strategies as a part of management practices and use results in their management process.	31
Crop producers will identify yield-limiting factors and increase long-term productivity.	712
Potato and blueberry producers will understand and use thresholds for pest treatment.	2,632
Producers will use strategic planning, record keeping and prediction models in their management practices.	2,628
Agricultural producers will implement Integrated Pest Management programs in Maine.	3,272
Producers will maintain pesticide certification by attending pesticide re-certification programs.	2,909
Producers will change pesticide application techniques and attitudes using Pesticide Applicator Training practices.	3,074
Producers will evaluate non-chemical pest control methods because of the Pesticide Impact Assessment Program.	755
Poultry and aquaculture producers will adopt Integrated Pest Management practices.	0
	172

Maine citizens will take action to protect Maine's natural resources, by becoming inland and costal watershed stewards.	258
Maine citizens will form weekend watershed conservation teams to take action to correct easily correctable problems with the assistance of UMCE staff.	0
Maine citizens will use appropriate home horticulture practices to protect water resources.	579
Maine citizens will complete lake watershed surveys.	12
Maine citizens will have increased awareness of the threats to drinking water.	550
Maine citizens will take action to protect shellfish resources.	182
Maine citizens will water quality and monitor phytoplankton for an early warning system for toxins affecting public health.	459
Community groups will be involved in watershed management initiatives.	25
Acres will be covered in watershed management initiatives.	93,950
Maine citizens will be involved in leadership training to protect natural resources.	61
Maine residents will protect wetland and riparian habitats.	72
Maine citizens will protect wildlife habitat in suburban and rural settings.	0
Farmers and homeowners within source water protection areas will assess and take action to prevent water contamination.	2
Maine citizens will conduct coastal watershed surveys.	0
Maine citizens will have increased awareness of threats to marine habitats.	0
Maine coastal groups will learn capacity building techniques to protect marine resources.	0
People will graduate from UMCE Compost School.	70
Agricultural producers will start composting.	30
Municipalities will start composting.	27
Private compost facilities will be established.	35
Households will start composting.	152
Volunteer hours will be given by Master Composters for community projects.	120
People will participate in Master Composter projects.	0
Master Composter projects will be created.	0
Private composters will attend programs.	214
Master Gardener Volunteers will be train in composting education.	269
Residents will attend home composting programs.	183
Master Composters will be trained.	0
People will recognize significant improvement in gardening skills through participation in public garden programs.	2,985

Volunteer hours will be given by Master Gardeners to provide horticulture information to the public and develop community horticulture projects.	17,333
Educational and community projects will be developed and/or run by Master Gardeners.	237
People will participate in Master Gardener educational events and community projects.	8,313
Master Gardeners will further their education through college classes or technical programs.	27
Master Gardeners will start a horticulture-based business.	32
Specimens will be collected.	855
People will start a garden.	194
Soil tests will be submitted.	2,286
People will expand their garden space.	102
Soil tests will be interpreted.	413
People will report reduced pesticide use.	145
People will donate vegetables to food pantries.	417
People will adopt ecologically sound landscape practices that enhance wildlife habitat.	187
Pounds of produce will be donated to food pantries.	65,297
Value (in dollars) of food will be donated to food pantries.	63,699
Responses will be made to public requests.	7,284
Horticultural therapy programs will be started.	3
People will use adaptive gardening techniques.	33
Youth will demonstrate environmental stewardship and/or sustainable natural resource practices.	2,617
Youth will demonstrate a knowledge of the laws of ecology and/or an understanding of their connections with the earth.	3,555
Number of producers using Integrated Pest Management practices in apples, potato, sweet corn, greenhouses and cranberries.	775
Number of producers changing pesticide application techniques and attitudes using pesticide application practices.	110
Number of producers evaluating non-chemical pest control methods because of the Pesticide Impact Assessment Program (PIAP).	11
The USDA receives accurate information on pesticide use in Maine. Information gathered through a PIAP survey of the agricultural community. Number of surveys conducted.	5
Number of Maine producers implementing pesticide best management practices to protect the environment.	141
Number of Maine citizens who become certified pesticide applicators.	136
Number of Maine citizens making an informed decision regarding a pesticide application.	8,481

Number of gardeners and others who understand the ecology of beneficial and pest organisms and/or pest issues related to a specific commodity, crop or household situation.	17,952
Number of Master Gardeners who are able to successfully identify beneficial and pest organisms and utilize appropriate management techniques.	799
Number of Maine citizens who address a pest management issue after consultation or diagnosis by Pest Management Office staff.	4,564
Maine citizens will access up-to-date information on the Pest Management Office Web site and UMCE Web page (# of hits).	184,734
Number of individuals and groups who develop goals and objectives for their forest.	833
Number of individuals or groups who develop a forest management plan.	48
Number of acres of forest included in forest management plans.	4,024
Number of individuals who implement their forest management plan.	22
Number of environmentally appropriate forest management practices adopted and the number of acres affected.	328
Number of environmentally appropriate forest management practices adopted and the number of acres affected.	2,956
Number of participants who consider alternative income opportunities for their land.	104
Number of alternative income opportunities adopted.	0
Number of BMP's adopted and the number of acres affected.	0
Number of erosion control measures adopted and acres affected.	0
Total dollars saved or earned as a result of implementing management changes learned through UMCE programs to enhance economic viability.	0
Total dollars saved or earned as a direct result of implementing new management changes learned through UMCE programs to utilize forest products more effectively.	27,000
Number of manufactures adopting safety practices.	40
Number of manufacturers who can describe the relationship of production, economic and environmental variables in making management decisions.	69
Number of firms implementing strategies or practices to increase product value or dollars earned.	48
Total dollar value from value-added strategies to local communities.	
Number of new or expanded market opportunities for forest products.	4
Number of firms incorporating strategic planning, record keeping and predictive models in their management practices.	0
Number of firms implementing changes in management as a result of developing strategic goals and objectives.	26

Number of municipalities who develop and implement components of comprehensive urban forest management plans.	0
Number of urban forest resource management plans developed and implemented.	0
Number of participants completing the Covert Projects training.	0
Number of volunteer hours given by Coverts Cooperators to provide wildlife and forest resource information to the public and develop community outreach projects.	0
Number of youth and adults participating in Coverts Project outreach efforts.	0
Number of acres affected as a result of Coverts Cooperator outreach projects.	0
Number of environmentally appropriate practices adopted as a result of Coverts Cooperator outreach projects.	0
Number of communities starting a public policy process involving wetlands, timber harvest, endangered species and other resource issues.	0
Number of acres protected and enhanced by implementing strategies acquired as a result of public policy educational programs on sustaining renewable natural resources.	0
Number of acres protected but not enhanced by implementing strategies acquired as a result of public policy educational programs on sustaining renewable natural resources.	0
Number of contact hours of continuing education instruction delivered by UMCE staff or in collaboration with partners.	1,069
Number of natural resource professionals, educators and service providers attending continuing education instruction delivered by UMCE staff or in collaboration with partners.	92
92Number of natural resource professionals, educators and service providers incorporating new knowledge and adopting new practices in their work.	92
Number of acres affected by the adoption of current or new practices.	
Number of natural resource professionals who obtain their apprentice wood scaling license as a result of attending UMCE programs.	38
Number of loggers attending safety workshops.	0
Number of loggers adopting safety practices.	0
Number of safety practices adopted.	0
Number of natural resource professionals and service providers implementing BMP's as a result of attending UMCE programs.	0
Dollars saved or earned as a result of implementing BMP's.	0
Acres affected as a result of implementing BMP's.	0
People will gather and organize information.	1,875

People will make informed decisions demonstrating environmental stewardship and sustainable marine resource practices.	1,530
People will take steps to achieve personal and community goals.	1,368

OUTPUT INDICATORS

Number of consultations.	32,252
Number of workshops/events.	820
Number of people attending the workshops/events.	29,279
Number of groups formed (ad hoc or formally organized).	103
Number of people involved in groups formed (above).	2,418
Number of volunteers trained.	1,852
Number of publications written.	514
Number of publications distributed.	581,126
Number of issues of newsletters written.	312
Number of people receiving newsletters within a year's time.	56,241
Number of audio visual resources developed (video, slides, displays).	161
Number of articles in news media.	217
Number of visits to cranberry Web site.	0
Circulation of articles in news media.	3,308,840
Number of Master Gardener volunteers successfully completing training.	319
Number of people reached through Farmers Markets.	12,340
Number of radio program listeners.	11,500
Number of radio programs produced.	7
Number of television segments produced.	38
Number of horticultural therapy adaptive gardening workshops/consultations.	24

Selected Program Accomplishments Corresponding to Key Themes

Key Themes: Integrated Pest Management, Sustainable Agriculture

Potato Integrated Pest Management Program: UMCE's Potato IPM program worked at 130 grower/cooperator field sites to survey potato pest populations and teach growers how to scout fields and implement pest threshold information and disease forecasting strategies. This led to more accurate and timely use of plant protectants and reduced the amount of active pesticide, herbicide and aphicide ingredients applied to crops. The program monitored for a variety of potato pests and diseases, focusing on control of potato late blight, aphids and the year's higher than normal population of European corn borer. We have undertaken a new project in cooperation with the Maine Agricultural Experiment Station and Cornell University to explore the use of biocontrol to manage European corn borer populations.

Summary of Impacts: Surveys and comments from growers indicated that an average of two to four applications of late blight fungicide was saved per grower per year directly as a result of monitoring and scouting data and recommendations made by UMCE. In a recent electronic poll growers reported the following financial savings from reduced late blight treatments: 16.5 percent reported saving at least \$500 per year; 16.5 percent reported saving at least \$1,000 per year; 25 percent reported saving \$2,000 per year; and 18 percent of reported saving more than \$2,000 per year. Physical monitoring of potato fields specifically resulted in one aphicide spray being eliminated from calendar spray schedules, equating to an industry savings of over \$1 million in reduced pesticide costs and over 16,000 gallons of aphicide not being used.

Scope of Impacts: Integrated Research and Extension

Key Themes: Integrated Pest Management, Pesticide Application

Apple IPM: Due to a decade-long decline in apple prices, Maine's apple growers face a difficult challenge in remaining economically viable. Quality standards have increased along with heightened scrutiny, regulation and customer concerns about pesticides. UMCE's apple IPM program helps over 150 growers increase their crop quality and profitability through pest monitoring and scouting activities that help minimize their pesticide use.

Summary of Impacts: Over 95 percent of the growers surveyed said the apple IPM program helped them reduce pesticide use and crop damage resulting from undiagnosed pest issues. The average reported savings was \$112 per acre, with a 30 percent reduction in pest damage. Statewide this represents an estimated \$390,000 in pesticide savings and a potential savings of over \$660,000 in damage prevention.

Scope of Impacts: State Specific

Key Themes: Agricultural Profitability, Sustainable Agriculture

Volunteer Potato Research Trial: Potatoes that are missed in the harvesting process can sprout in fields planted with alternative crops the following year. If left to grow, these untreated volunteer potatoes can transmit disease to neighboring

potato crops. The problem is often addressed with use of a commercial sprout inhibitor, but under certain conditions this treatment can damage existing crops. UMCE undertook an on-farm, 12-treatment applied research study to evaluate the best sprout control for the least cost to the grower. The trials produced data on a new, environmentally safe product that proved very effective on volunteer potatoes. The results were distributed to potato growers and agricultural products representatives at a grower meeting and throughout the state.

Summary of Program Impacts: Some of the growers attending the meeting had the opportunity to apply the recommended treatment to fields with volunteer potatoes. Approximately 100 acres of at-risk crop acreage were treated, resulting in no incidences of disease passed from volunteer potatoes to cultivated crops. It is anticipated that more acreage will be protected next year, as the treatment will be available earlier in the season.

Scope of Impacts: Integrated Research and Extension

Key Themes: Water Quality, Soil Quality, Agricultural Profitability, Drought Prevention and Mitigation

Winter Irrigation Symposium: Growers who irrigate crops without a complete understanding of the potential effects can cause pesticides to run off or leach through soils and affect water quality. This year UMCE held training programs and conducted applied research and demonstration projects to teach potato growers about timely irrigation, different methods to improve irrigation, and alternative methods to reduce soil water loss and improve potato growth and development. In 2002 we held the *Winter Extension Irrigation Symposium* in northern Maine, attended by 75 growers and related industry personnel.

Summary of Impacts: Attendees responding to symposium evaluations indicated that their new understanding of irrigation application and water loss principles would help them to be more efficient and cost effective in their operations. In an effort to put a dollar value on this new efficiency, 25 percent anticipated a cost reduction of \$750, 17 percent estimated \$1,500, eight percent estimated \$3,500 and 50 percent estimated cost savings of over \$5,000.

Scope of Impacts: State Specific

Key Themes: Yard Waste/Composting, Recycling

Residential Home and Backyard Composting: The EPA estimates that the average American generates 4.46 pounds of solid waste every day. At UMCE, we offer residential and backyard composting education through workshops and as part of our Master Gardener training curriculum. This year 189 persons completed Master Gardener training. We also conducted 21 home composting workshops with 183 people attending. Relevant composting information was also delivered through individual consultations and the distribution of 286 publications on home and backyard composting.

Summary of Impacts: As a result of our residential and backyard composting education, 142 households began composting during the past year, creating the potential for over 550,000 pounds of solid waste to be removed from the residential waste stream.

Scope of Impacts: State Specific

Key Theme: Home Lawn and Gardening

Maine Master Gardeners: UMCE offers Master Gardener training in 15 of our 16 Maine counties, educating citizens about the art and science of growing fruits, vegetables and ornamental plants. After completing the classroom phase, master gardeners contribute volunteer time to community gardening and landscaping projects. This year 237 community projects that were developed and/or run by Master Gardener volunteers, with over 8,000 people participating. Thirty-two Master Gardeners started a horticulture-based business during 2002. Also during 2002, our nutrition program educators and 4-H Youth Development team collaborated with the Master Gardeners program in a five-month comprehensive gardening and nutrition program to teach youth and low-income families to grow and consume healthy garden produce. Master Gardeners are also partnering with UMaine researchers in an evaluation of native ornamental plants as landscaping alternatives to invasive species.

Summary of Impacts: Evaluations of the Master Gardeners/4-H youth gardening and nutrition program indicated that 100 percent of the participants and their families grew and consumed fresh vegetables and herbs for the first time. Parents of program participants indicated that 70 percent of their children gained self-esteem as a result of their success in gardening. Also during 2002, a statewide evaluation of master gardeners was conducted among those who have participated in the program over the past 10 years. Evaluations from 237 graduates indicated the following:

- 43 percent increased their capacity to raise more produce than they had previously.
- 55 percent learned ways to garden more efficiently, produce food for themselves and their families, and realize a financial savings.
- 99 percent identified a positive impact that the master gardener program and volunteer experience had on themselves, their family, or people they know.
- 81 percent reduced their use of pesticides and herbicides from previous levels.
- 90 percent used agricultural chemicals with less toxicity.
- 90 percent purchased and gardened with disease resistant plants, as opposed to those identified as likely to need chemical treatments to avoid disease.
- 85 percent avoided ornamental plants with known pest problems.
- 96 percent avoided purchasing or using invasive plants.
- 79 percent stated that the master gardener training had a positive impact on their community involvement, such as being a member of trusts, local boards, etc.

Scope of Impacts: Integrated Research and Extension

Key Themes: Wildlife Management, Land Use, Urban Gardening

Enhancing Backyard Habitat: Maine is the most heavily forested state in the nation. Most small landholders are surrounded by forested landscape, making their forestland part of a larger forest system. Landowners have expressed the

need for help in enhancing their forest habitat and managing human/wildlife conflicts. UMCE's Enhancing Backyard Habitat program delivers workshops and educational consultations and publishes a fact sheet series that gives landowners an understanding of species, their habitat needs, actions for enhancing habitat and tools for managing conflicts.

Summary of Impacts: Landowners have enhanced habitat for wildlife through increased knowledge, understanding, appreciation and awareness of plants; and managed conflicts with wildlife in humane and cost-effective ways. Landowners have used their new knowledge of habitat management in teaching youth, in their business endeavors, in municipal policy decision-making, and by sharing with neighbors. An evaluation of the program based on 128 responses from 369 recent participants reveals the following:

- 46 percent have observed increased use of their land by wildlife.
- 45 percent have observed new wildlife species on their land.
- 19 percent have reduced or eliminated the use of pesticides on their land.
- 46 percent have avoided planting invasive non-native plants, and 34 percent have consciously selected native Maine plants for their landscape.

More than 1,000 acres have been enhanced as habitat and managed with ecologically sound landscaping practices within the past two years.

Scope of Impacts: State Specific

Key Themes: Recycling, Water Quality, Biodiversity, Energy Conservation, Composting, Natural Resource Management, Communication Skills, Leadership Training and 4-H Youth Development

Earth Connections Camps at Tanglewood 4-H Camp and Vaughn's Island: One thousand twenty-six youth participated in 4-H Earth Connections summer and school overnight programs offered by UMCE during 2002, at both Tanglewood 4-H and Vaughn's Island camps. Camping experiences included outdoor discovery camping, canoeing, kayaking and hiking trips, day and overnight residential camps, sustainable farming and gardening camps, island and marine ecology camps, two- and three-week teen leadership trainings and spring/fall school programs. Many leadership program participants continue on to participate in the programs as paid and volunteer councilors. This year we trained approximately 45 summer program councilors and 10 school program councilors. Our programs draw campers from a spectrum of ethnic and economic backgrounds, giving youth the opportunity to interact with others from diverse backgrounds. This year more than \$52,000 in financial aid was raised and awarded to 359 low-income campers.

Summary of Impacts: This year UMCE, in collaboration with the UMaine Center for Research and Evaluation, conducted a five-year survey of Tanglewood 4-H Camp participants in the areas of knowledge gained, skills acquired, attitude change, behavioral change and career goals. Below are highlights of the impacts revealed by the study:

- Knowledge gained: Eighty-four percent of parents reported that their child was more knowledgeable about the environment and concepts of ecology such as recycling, tree and plant identification, conservation of food and resources, and natural history. Seventy-one percent of campers reported

that they had gained knowledge about the environment and the ecosystem, including the laws of ecology, composting and sustainable agriculture.

- Skills gained: Seventy-three percent of parents reported that their child gained skills such as backpacking and low-impact camping, independence, community living, leadership, swimming, cooperation, team-building skills and map and compass skills. Sixty-four percent of campers reported that they had gained skills such as working well with other people, public speaking, self confidence and gardening.
- Attitude change: Sixty-three percent of parents reported that their child's attitude changed in positive ways, such as being more positive and confident, exhibiting a higher self esteem, having more concern about the environment, and being more cooperative, flexible, helpful and self-reliant. Forty-three percent of campers reported that their attitude changed in positive ways, such as being more confident, having more respect for nature, being more environmentally aware and being more tolerant of others.

Goal setting: Fifteen percent of parents said their child had established new life and career goals including farming, joining the Peace Corps or becoming a teacher, physiatrist, lawyer, politician or outdoor leadership specialist. Twenty-one percent of the campers reported establishing new life and career goals including environmental education, public school teaching, chemical engineering, bio-resource engineering, child care and marine biology.

Scope of Impacts: NY, NH, TX, CT, VA, CA, FL, MD, VT, DE, HI, NJ, NM, OH, RI, MA and ME. Countries: Australia, France, Taiwan, Virgin Islands, United Kingdom, Ireland and Latvia

Key Themes: Natural Resources Management, Marine Environmental Monitoring, Land Use, Soil Erosion, Wetlands Restoration and Protection

Southern Maine Beach Profile Monitoring: Since 1999 UMCE and Maine Sea Grant have been partnering with the Maine Department of Conservation Bureau of Geology and Natural Areas, UMaine and the Maine Coastal Program to gather data on changes occurring on Maine's beaches. The information is used to guide beach management and planning for federal, state and community use. UMCE and Maine Sea Grant coordinate the data collection efforts of approximately 150 volunteer monitoring teams covering 16 of Maine's sandy beaches between Georgetown and York.

Summary of Impacts: The data generated by the program is being widely used to enhance beach-planning efforts. The Maine Department of Conservation Bureau of Geology has used the data to determine the results of harbor dredge and beach nourishment projects, in review of Maine Department of Environmental Protection permits for activities in coastal sand dunes, and to develop the first beach nourishment policy in the state. Coastal municipalities in southern Maine refer to the data as an important part of their comprehensive planning processes.

Scope of Impacts: Integrated Research and Extension

Key Theme: Fisheries

Sea Urchin Summit: Maine's once booming sea urchin fishery is struggling with rapidly declining landings. Years of over fishing and unsatisfactory management have been compounded by ecological changes in urchin habitat that prevent biological recovery of the resource. To stimulate more innovative and effective urchin management, the MET was asked by the Maine DMR to organize and facilitate a one-day sea urchin summit bringing together fishermen, processors, scientists and regulators to explore new ways to manage the fishery. The summit produced discussion and support for new management actions and made clear the serious condition of the urchin fishery.

Summary of Impacts: The summit produced revisions of the sea urchin research funding process and identified the need for research results to be presented in a new format that is more usable to fishermen. The new format will also help the industry, scientists and legislators understand the benefits that research could have for management of the urchin fishery. The summit also resulted in a specific research project being conducted by DMR and industry personnel on the conservation benefits of using large mesh diver bags while harvesting, in order to capture legal size urchins and filter out undersized, immature urchins, allowing them to remain to grow and reproduce. The research had positive results and a conservation recommendation to use the large mesh bags was presented by DMR to all industry members.

State Specific: Integrated Research and Extension

Key Theme: Fisheries

Clam Industry Builds Research Capacity: Since 1999, UMCE and Maine Sea Grant have worked together with the Maine Department of Marine Resources (DMR) and researchers from Maine Maritime Academy and UMaine Machias to build research capacity within the local clam harvesting industry by undertaking an applied research project that can enhance the potential harvest of clams in typically unproductive clam flats. Clam diggers have learned distribution methods for soft-shell clam seed, enhanced the set of the seed and documented statistics on the success and/or failure of their efforts. During previous seasons, the collaborators have worked to help the clam diggers use and understand required techniques and protocols required for permits from the Army Corp of Engineers, to enable them to continue the research on their own.

Summary of Impacts: With minimal assistance from the project partners, clam diggers have this year received their own permits from the Army Corp of Engineers, displaying that capacity for research had been built within the industry and communicated to the regulatory overseers. The research project has continued under the direction of the clam diggers' regional shellfish committees with indications for favorable results. Clam diggers have strengthened contacts with the DMR and with researchers, and have acquired knowledge regarding the methods and value of collecting data on their activities. This group is now better equipped to pursue issues that relate directly to their work, using credible research techniques.

Scope of Impacts: Integrated Research and Extension

CSREES Goal 5

Enhanced Economic Opportunity and Quality of Life for All Americans

Executive Summary

Economic Development

Our work with small and home-based businesses has helped expand employment opportunities in Maine, helping many families secure and sustain a livable wage and improve their quality of life. During 2002, UMCE's small and home-based business education programs reached 4,000 people through workshops and educational events, individual assistance and business-related publications. We have helped Maine entrepreneurs learn valuable business management techniques and acquire useful information through community radio, seminars, conferences and business clinics. Our innovative and effective educational programs have enhanced economic opportunities for thousands of Maine people, particularly those living in the more rural parts of the state. Our efforts have been expressed through work in local, regional and statewide resource-sharing roundtables and events focused on increasing the visibility and accessibility of business education resources for Maine's entrepreneurs. We have provided reliable research-based information for potential and existing entrepreneurs through our recently developed Web-based *Virtual Resource Library*, currently featured as an on-line tutorial on the state of Maine's business assistance Web site, *MaineBusinessWorks.org*.

This year our small business educators worked with diverse businesses in multiple ways. We have delivered workshops on pricing products and services, creating business plans, creating wholesale strategies and developing personal leadership skill to existing small business operators in Maine. We helped specialty food businesses access new markets, child-care providers keep better financial records, small farmers develop marketing plans, and inventors access needed funds for business ventures. We conducted small business clinics and educational workshops at the Passamaquoddy Tribal Reservation in Indian Township, and are making plans to expand the program to a second Passamaquoddy reservation at Pleasant Point.

Our business education faculty have also cooperated with researchers at UMaine in several important economic development research projects. In one project, our staff is working with the UMaine Department of Resource Economics and Policy on a *Fund for Rural America* project focusing on small and independent grocery store retailing in Maine. In another, we are investigating the economic impact of cruise ship passengers on the economy of Mount Desert Island.

As in past years, the value of our business education work was enhanced through partnerships with other business-assist organizations such as the U.S. Small Business Administration, the Maine Department of Economic and Community Development, and Resource Conservation and Development councils throughout Maine. We initiated or participated in over 40 collaborative and/or cooperative efforts with other business-assist organizations, small business owners and researchers. These activities included:

- Mid-Coast Home-Based Business Conference
- Business-Assist Resource-Sharing Roundtables
- Incubator Without Walls Entrepreneurship Programs
- Entrepreneurship Working Group
- Business Outreach on Community Radio
- Governor's Economic Development Conference
- National Home-Based and Micro-Business Design Team

Child, Family & Adult Development

UMCE is committed to supporting children, adults and families to learn positive ways of interacting that promote healthy relationships. We use a variety of methods to reach people across the life span, whether they are new parents coping with the stresses of a changing family, families making life transitions, or aging adults needing assistance. This year our staff provided educational resources and workshops to parent educators and child-care providers on human and family development and developmentally appropriate practices, and helped them to develop as professionals by learning group leadership skills, communication and relational skills and developmental theory and frameworks. We are teaching child-care providers new skills that enhance their ability to care for children. Parenting skills education was made available to parents and caregivers in a variety of formats including county office lending libraries, Web sites, state and national publications and workshops. Subscriptions to *Family Issues*, our research update newsletter, are continuing to grow this year. In 2002, *Family Issues* newsletters continued to focus on violence prevention, and were sent to each school system in the state as well as several police stations. Early in 2003, we will evaluate the degree to which this special series has initiated and supported positive changes in school climate and student/educator behaviors.

UMCE's Knox County Teen & Young Parent Program continues to help young first-time parents learn about parenting and child development and has a critical role in helping teen parents advance their own developmental process. The parent educators and volunteer mentors of this program play a significant role in developing positive relationships among teen parents and their children. Over five years, 365 parents have been engaged by our certified parent educators through home visiting and the efforts of trained adult mentors. Our success derives in part from the nationally recognized Parents as Teachers® curriculum, which is based on the principle that parents are their children's first and most influential teachers. This year we developed and delivered a new four-part program, *A Parent is Forever*, to help parents address parenting issues during and after separation and divorce.

Since 1993, UMCE has enjoyed a partnership with WERU, a nonprofit community radio station serving five counties in mid-coast Maine. That partnership has produced over 150 one-hour public affairs programs on family-oriented issues affecting Maine communities. This year over 25 guests highlighted family issues in nine radio programs. One program following the September 11 attacks featured a leader in the regional Muslim community. The guest shared his views and experience and provided a primer on the Muslim faith.

Other programs focused on how Hospice helps families with living and dying; the roles adoption and foster care play in helping children who are in the care of the state; how a community-based program helps women break free from violence and abuse; and how parents and community members can promote good mental health among teens.

The importance of the effect of an aging population is evidenced by the number of UMCE programs that were offered to address the needs of older adults in our communities. We addressed concerns about Alzheimer's disease and memory loss in a memory enhancement workshop, which gave participants a brief overview of how memory works, lifestyle factors that affect memory functioning and easy and fun ways to enhance memory. Our senior clients are learning and using this information in their own lives and sharing it with others. Using a six-part *Elder Caregiver* series, we provided skills training to 67 certified nurse's aide students and people who are currently, or will soon be, caring for older adults. Visits by our Senior Companion Program volunteers helped clients stay in their own homes and continue living as independently as possible. Skilled volunteers provided companionship, ran errands, transported clients to health care providers, helped to make connections with community resources, shared meals and did simple things around the house such as help with paying bills.

Extension Homemakers are an important and traditional volunteer component of UMCE. Local groups gathered this year to learn leadership and relational skills, support their communities through public service and enhance their own lives. County educators supported homemaker groups by providing training, resources and information based on the needs of each group.

4-H Youth Development programs in Maine focus on positive, esteem-building experiences which become building blocks for young people to achieve their personal aspirations. During the past year, 4-H youth experiences involved youth in making responsible decisions, helping others, taking risks in supportive environments, learning how to work together and trying new things. 4-H Youth Development programs have addressed teasing and bullying, conflict management, personal differences, healthy lifestyle choices and safety in an effort to help youth understand how to take better care of themselves and respect those around them. As a result of a reported 4,300 youth participating:

- over 3,200 youth reported they will make healthy lifestyle changes,
- more than 1,400 youth reported they will use peaceful means to resolve disputes with others,
- nearly 2,600 indicated that they will value differences in their peers and
- over 1,200 will help their communities embrace diversity.

Our 4-H Youth Development staff and membership participated in the 4-H *National Conversations* effort to identify current and emerging youth issues and needs. Two *Conversations in Maine* events were held in our two largest cities engaging 85 young leaders in the process and identifying the following as top 4-H programming priorities:

- Career and college exploration
- Life skills development
- Leadership opportunities

- Safe Environments
- Strengthening adult/youth relationships
- Finding and using community resources

Once identified, these priorities were presented at the *National Conversations* event in Washington D.C. by six Maine 4-H youth ambassadors.

More than 1,500 youth participated in *Mini-Society* and *High School Financial Planning* programs, workshops and events this year that are designed to develop the money management, career exploration and entrepreneurial skills they need to achieve their personal financial goals.

Our youth development programming was profoundly enhanced by volunteer adults and teen leaders who help teach, act as positive role models and respect the needs, rights and dignity of the youth with whom they work. Over 1,900 adults, including 774 new to the 4-H Youth Development program, extended the efforts of our educators during 2002.

Although the primary focus of our Limited Income Nutrition Education (LINE) program is to teach families to use their resources more effectively to obtain nutritious meals, our nutrition educators and aides also helped families make important community connections and support their personal growth. Through our nutrition education programs we helped to increase our clients' self-reliance, self-initiative, positive family relationships, family and community involvement, and positive reading habits. The areas of greatest impact are demonstrated by the following client behaviors:

- contacting community, social, or educational agencies regarding needed resources;
- expressing positive goals for the future;
- increasing positive feeding relationships with children;
- increasing networks of support;
- increasing participation in school, church or community programs;
- using community resources to solve problems; and
- demonstrating positive reading habits.

Our staff reported that community connections were developed as a result of contacts with over 750 LINE program clients this year.

This year a new performance goal was added to our Goal 5 intentions to enhance economic opportunity and quality of life for Maine citizens. Performance goal 5-16 allows our programming staff to track their success in increasing the capacity of program participants and volunteers to be active and effective educators and leaders in their families and communities. Our staff delivered 140 workshops, seminars, conferences and consultations to participants and volunteers-in-training, who used their skills to deliver 56 such events on their own to over 270 individuals. Participants and volunteers increased their participation and confidence in resolving family, organizational and community issues; increased their educational and leadership skills; and became involved in public policy issues affecting families, organizations and communities in Maine.

Source of Funding

Performance Goal	FTE Days	Smith/Lever [b] & [c]	Smith/Lever [d]	State Funds	Total Funding per Performance Goal
Goal 5 Total	6,243	\$667,839	\$0	\$667,839	\$1,335,678

Consolidated Plan of Work Performance Goals 5-1 through 5-16

OUTCOME INDICATORS: Behaviors and Impacts

	Total Days:	6,243
People will contact business-assist organizations.		520
People will take part in networking opportunities.		1,619
People will report ease in understanding and accessing small business educational resources.		362
Enterprises will be retained/expanded.		288
New enterprises will be created.		187
Non-viable business will not be started.		37
Enterprises will transition to closure.		6
Enterprises will report increased revenues and/or decreased costs.		36
Jobs will be created.		67
People will write business plans.		134
People will write marketing plans.		110
People will write customer service plans.		38
People will develop record keeping systems.		76
People will adopt one or more business management practices (e.g. developing a pricing strategy, etc.).		818
Cooperative groups will be formed.		23
Collaborative groups will be formed.		16
Educational activities resulting from cooperative/collaborative efforts.		46
People will report mentoring other business owners.		35
People will present/facilitate educational activities at conferences, etc.		93
People will increased their confidence and participate in organizational or community affairs related to small business.		73
People will report increased understanding of personal leadership skills.		14
People will report increased understanding of others' leadership skills.		14
People will use leadership skills to bring about change in their business and those with whom they interact.		56
People will use leadership skills to enhance small or home-based businesses in Maine.		79

People will be involved in public policy issues affecting small or home-based businesses in Maine.	5
Parent educators will adopt at least one new practice or skill in leading parenting classes or groups.	12
Parent educators will adopt at least one new practice or skill in working with parents.	36
Child care providers will adopt at least one new practice or skill that enhances their ability to care for children and/or work with parents.	213
Adults will adopt at least one new parenting skill.	1,528
Adults will incorporate new information that enhances a child's development.	1,954
Child care providers will adopt at least one new parenting skill.	415
Child care providers will incorporate new information that enhances a child's development.	432
UMCE nutrition aides and educators will incorporate parent education materials into their programs.	23
The number of UMCE parent educators incorporating nutrition education materials into their programs.	20
The number of coalitions with UMCE involvement that support healthy child development and position parenting skills.	97
Adults will adopt a least one new growth-enhancing skill.	2,292
Adults will develop strategies to strengthen family and other important relationships.	1,543
The number of adults enhancing their knowledge and/or skills to provide necessary care for aging family members.	846
With UMCE involvement, coalitions that facilitate building systems needed for adults will engage in positive, growth-enhancing behaviors.	183
Youth will demonstrate and document workplace skills and competencies.	497
Youth will organize and maintain appropriate personal financial information.	296
Youth will make informed financial decisions.	337
Youth will take steps to achieve personal financial goals.	317
Youth will demonstrate and document the ability to work in diverse settings.	395
Youth will demonstrate the qualities necessary to run a successful business.	274
Youth will demonstrate the skills necessary to run a successful business.	268
Youth will demonstrate character development (self-discipline, managing feelings, self-responsibility, self esteem, integrity, honesty, reliability, loyalty).	3,388
Youth will demonstrate their ability to resolve conflict through peaceful means.	1,501

Youth will make appropriate decisions and resolve problems effectively in their daily lives.	2,543
Youth will demonstrate tolerance and acceptance of differences (peaceful conflict resolution, social skills, cooperation, courtesy, communication, respect, fairness and justice).	2,636
Youth will volunteer in their communities.	2,080
Youth will demonstrate responsible citizenship (self-motivation, teamwork, contributions to group effort, community service/volunteering and accountability).	3,859
Youth will demonstrate empathy and concern for others (nurturing relationships, sharing, charity).	2,733
Youth will demonstrate their ability to lead others.	2,004
Youth will set appropriate and reasonable goals for themselves and others.	2,942
Youth will serve effectively on teams with peers and adults.	2,501
Youth will make healthy lifestyle choices.	3,205
Youth will use peaceful means to resolve disputes with others.	1,408
Youth will develop and use safe and peaceful means to resolve disputes in their communities (town, neighborhood and school).	880
Youth will develop mutually caring relationships with peers.	1,967
Youth will value differences in their peers.	2,593
Youth will engage others in being supportive in their communities.	954
Youth will help their communities embrace diversity.	1,242
Adults will participate in community-based efforts to reduce violence.	803
Youth will practice appropriate safety procedures in home, work, or recreational activities.	1,876
Adults/older youth will use developmentally appropriate hands-on, experiential educational methods.	2,413
Adults/older youth will demonstrate that they are responsible, contributing members of their community.	2,201
Adults/older youth will demonstrate essential communications skills.	2,214
Adults/older youth will teach peaceful conflict resolution skills.	800
Adults/older youth will teach essential communication skills.	1,613
Adults/older youth will demonstrate peaceful conflict resolution skills.	1,167
Adults/older youth will teach acceptance of differences.	1,633
Adults/older youth will demonstrate acceptance of differences.	1,651
Adults/older youth will demonstrate fairness and equity.	2,054
Number of adults/older youth who teach fairness and equity.	1,009
Number of adults/older youth who demonstrate leadership.	2,302
Number of adults/older youth who teach leadership.	1,550
Youth will identify personal goals, values and aspirations.	2,842
Youth will engage in activities related to their short-and long- term goals.	3,047

People gathering/organizing personal, financial information.	13
People making informed decisions.	13
People taking steps to achieve personal and goals.	13
Participants will increase in contacts to community, social, or educational agencies to access needed resources or skills.	84
Participants will initiate job training/job seeking/literacy skills.	54
Participants will attain a driver's license, business license or other bridge to employment opportunities.	36
Participants will cease/decrease unhealthy or anti-social behavior, addiction or lifestyle pattern, including necessary or desirable weight reduction or weight gain.	63
Participants will express positive goals (aspirations) for the future.	87
Participants will reduce debt or saving money.	68
Participants will demonstrate increasing order, organization or cleanliness in the home environment.	77
Participants will report or demonstrate increased positive communication in the home.	63
Participants will report or demonstrate increased positive feeding relationship with children (e.g., applied knowledge of children's serving sizes, improved mealtime atmosphere, family eating together, children assisting with cooking or food shopping, etc.).	81
Participants will increase network of support persons/resources.	96
Participants will increase participation in school, church or community programs, events and opportunities, including volunteer efforts.	84
Participants will increase attempts to address needs and solve problems through use of community resources.	85
Participants will demonstrate positive reading habits by increasingly having books visible in the home.	71
Participants will demonstrate positive reading habits by increasingly having general reading materials (newspapers, magazines, etc.) in the home.	76
Participants will demonstrate positive reading habits by reporting increasing visits to a local library.	38
Participants will demonstrate positive reading habits by describing increasing reading activities (reading, finger rhymes, talking about books, etc.) with child/children.	54
Participants will demonstrate positive reading habits by describing increasing reading for self.	66
Participants will demonstrate positive reading habits by expressing increased enthusiasm for reading and ideas found in books.	81

Participants will demonstrate positive reading habits by describing/demonstrating increased positive family relationships through reading and reading related activities.	70
Participants will demonstrate positive reading habits by contacting an agency to access literacy assistance for self.	3
Participants and volunteers will increase their confidence and participation in resolving family, organizational, or community issues.	629
Participants and volunteers will increase their educational and leadership skills.	662
Participants and volunteers will use their educational and leadership skills to bring about change in their family, organization, or community.	665
Participants and volunteers will use their educational and leadership skills to bring about change in their family, organization, or community.	196

OUTPUT INDICATORS

Circulation of articles in news media	13,290,174
Estimated audience involved in broadcast	31,500
Number of articles in news media	302
Number of audio visual resources developed (video, slides, displays)	194
Number of consultations	7,519
Number of cooperative efforts initiated	26
Number of economic reports disseminated	73
Number of educational radio, TV & internet programs given	31
Number of educational workshops, seminars, or conferences conducted by Extension program participants and volunteers.	31
Number of educational workshops, seminars, or conferences conducted by UMCE staff.	57
Number of enterprises assisted	945
Number of existing small business owners participating in UMCE educational programs	816
Number of groups formed (ad hoc or formally organized)	222
Number of home budget plans written	0
Number of home visits	283
Number of home visits by parent educators	1566
Number of individual consultations held	412
Number of individuals participating in collaborative efforts	273
Number of individuals participating in cooperative efforts	508
Number of issues of newsletters/calendars written	352
Number of issues of newsletters distributed	3300
Number of one-on-one consultations or trainings conducted by Extension program participants and volunteers.	25

Number of one-on-one consultations or trainings conducted by UMCE staff.	83
Number of organizations involved in collaborative efforts	160
Number of organizations involved in cooperative efforts	48
Number of participants in educational workshops, seminars, or conferences conducted by Extension program participants and volunteers.	271
Number of participants in educational workshops, seminars, or conferences conducted by UMCE staff.	462
Number of people attending small business clinics	155
Number of people attending the workshops/events	45,362
Number of people attending the workshops/events (for the aides)	544
Number of people attending UMCE educational workshops	1162
Number of people attending UMCE-sponsored networking programs	476
Number of people cooperatively and collaboratively planning educational events	76
Number of people involved in groups formed	2,471
Number of people receiving newsletters/calendars within a year's time	45,764
Number of people requesting business-related information	742
Number of people requesting home budgeting information	13
Number of potential small business owners participating in UMCE educational programs	281
Number of promotional/informational articles distributed	18,326
Number of promotional/informational articles written	24
Number of publications distributed	49,392
Number of publications written	33
Number of resources loaned	515
Number of small and home-based business owners participating in collaborative efforts	33
Number of small and home-based business owners participating in cooperative efforts	134
Number of small business clinics held	83
Number of Trade Area Analyses conducted	1
Number of UMCE educational workshops held	121
Number of UMCE-sponsored networking programs held	24
Number of volunteers trained	1,538
Number of workshops/events	1,252
Number of workshops/events (for the aides)	9

Selected Program Accomplishments Corresponding to Key Themes

Key Themes: Character/Ethics Education, Gender Education

The Gender Project: The Gender Project began in 1995 as a York County initiative, to provide educational support and assistance regarding gender socialization and equity issues in our homes, schools and communities. This project has steadily grown across the state to include community parent programs, staff development training for teachers and agency staff, publications and ongoing newsletters. The goal of UMCE's Gender Project is to support both boys and girls in developing a full repertoire of skills so that they will be happy and successful in their varied adult roles. Parents and teachers discuss the gender-related concerns of bullying and violence, body image and eating disorders, dangerous risk-taking behaviors, sexualized violence and more. We talk about the overwhelming and damaging influence of media on young people and recognize that the cultural forces that define masculinity and femininity are complex and powerful. During 2002 the Gender Project presented 30 workshops for over 400 participants, and 130 consultations were held with teachers, adult education programs, parents, Girl Scout administrators, domestic violence personnel and other community members. Many of these programs were offered in collaboration with adult education programs, Girl Scout groups and parent support organizations. A variety of 'train the trainer' programs were offered at school district teacher workshops, as well as professional conferences for counselors, foster parents and agencies working with domestic violence issues.

Summary of Impacts: A comprehensive impact study of the Gender Project (available at <http://www.umaine.edu/umext/genderproject/news.htm>) was completed during 2001 in collaboration with the Human Resource Development Department at the University of Southern Maine. Participants reported that they have learned new concepts, increased awareness around issues of gender and discovered a new knowledge base from which to draw. In addition, respondents also reported changes in behavior, specifically regarding communication and incorporating gender bias and stereotype awareness into their work and personal lives. Participants also reported an increased consciousness of their own gender stories.

Scope of Impacts: State Specific

Key Theme: Aging

Elder Caregiving: Along with the Maine Department of Human Services, the Maine Bureau of Health's Public Health Nursing program and the Sebecook Farms Senior Enrichment Program, UMCE developed a six-part Elder Caregiver series for certified nurse's aide students and people who are currently or will soon be caring for older adults. The course included lectures, a videotape presentation, group discussion and small group activities. An *Elder Care Resource Corner* was established for use by area libraries throughout the Sebecook Valley area using several award-winning video programs, written material developed during the six-

part series and selected resource books. Twenty caregivers participated in the series and 26 others assisted, supported, or promoted the program in some capacity.

Summary of Impact: Comments from 67 past participants indicated broad-based gains in knowledge and an increased appreciation for the needs of elders and elder caregivers. Almost 80 percent had plans for how they would use information they had learned, including personal, family and workplace use. About 72 percent reported that the information they gathered through the series would make a difference in their lives, the lives of family members or friends, or the lives of people they encountered in their work. Caregivers indicated that they were more prepared to handle the caregiving responsibilities that they faced now or would face in the future. Several of the respondents indicated that their jobs would be easier, careers would be enhanced and the patients they served would benefit from what they had learned.

Scope of Impacts: State Specific

Key Theme: Youth Development/4-H

Targeting Life Skills: The Targeting Life Skills model is the foundation of all 4-H Youth Development programming in Maine. Staff and volunteer leaders are trained in its use and coach youth to understand, identify and make use of the life skills model in their daily life. 4-H members track their learning and use of life skills as part of 4-H project record keeping.

Summary of Impact: Analysis of records kept over the last five years by 70 members, ages 9 and older, show that 90 percent of them report using self-motivation skills, 83 percent used teamwork and sharing, 80 percent reported setting goals and 79 percent said they learned to keep records. The top ten skills used also included self-responsibility, cooperation, communication, personal safety and learning to learn. Every one of the 35 life skills on the wheel was used by at least some of the members. These are all skills identified by employers as desirable in future employees; thus, according to reporting by our own youth, 4-H is teaching them the skills they will need to be successful adults.

Scope of Impacts: State Specific

Key Themes: Character/Ethics Education, Leadership Training and Development, Respect, Youth Development/4-H

Youth Teaching Youth: In many instances, getting young people to talk and learn about issues such as respect for diversity, developing leadership skills and making healthy lifestyle choices is easier when adults are not leading the discussion. Several 4-H Youth Development programs in Maine take advantage of this by developing partnerships with young people and the adults who work with them, and collaborating with schools and other youth-serving agencies and organizations to create opportunities for youth to teach youth. In Oxford County, the Oxford Hills Respect Team is addressing issues such as cultural diversity, self-expression, sexuality, character education and HIV prevention. In Penobscot County, teenaged members of the ACTION Team (Active Creative Teens Improving Our Neighborhoods) are creating and conducting workshops for middle

school youth about building character and resolving conflict. In Waldo County, middle school youth use interactive drama to address bullying, teasing and peer pressure in their school. In York County, a 4-H Club with a member who is hearing-impaired decided to focus on educating themselves, other youth and adults about this disability and associated diversity issues.

Summary of Impact: Maine's 4-H Youth Development programs actively engage youth in teaching other youth as part of their 4-H experience, involving over 2,000 youth in sharing their skills and experiences, and developing the life skills of community service, communication, cooperation, leadership, self-esteem, planning and organizing in the process. Youth-adult partnership that have focused on identified needs, and that have resulted in the formation of more formal teams, have involved nearly 100 youth as leaders in their schools and communities.

- The Oxford Hills Respect Team received a two-year grant from National 4-H Council's Innovation Center that provided \$20,000 to support this year's programs.
- The Penobscot County ACTION Team received \$9,500 in grants from the Pine Tree State 4-H Foundation and the Penobscot Valley Health Association.
- Respect Day, Self-Expression classes, a Teen Hotline, Character Education workshops conducted by high school students, a Coffee House and an Educational video on Learn and Serve are examples of events and activities that have resulted from youth-adult partnerships.

Young people involved in these programs, both as teachers and as participants, report greater understanding and valuing of diversity, stronger conflict resolution skills and greater ability to identify and manage their feelings. Adults working with youth indicate greater respect for the contributions of youth, and are actively seeking to involve youth in program development and implementation.

Scope of Impacts: State Specific

Key Theme: Community Development

Strengthening Facilitation Skills: Staff members and volunteers from regional service agencies and organizations often interact collaboratively in groups. UMCE offered a four-part series titled Strengthening Your Facilitation Skills to help community group members increase the effectiveness of collaborations. Twenty-two staff and volunteers from 17 different agencies in Waldo County participated in the training.

Summary of Impacts: After two classes, participants acknowledged skills enhancement in setting ground rules in groups, prioritizing needs and using different tools and meeting structures. By the end of the 4th class series, 79 percent could summarize group thinking; 64 percent could balance time so agendas were covered; and 50 percent could move the group from idea generation to action planning. One hundred percent reported they better understood the process of facilitation. As a result of the training, 17 participants (77 percent) volunteered to donate time to facilitate a two to three hour meeting in their community. Long term individual and community impacts of the trained facilitators' work will be assessed in one year's time. Due to high community interest a second facilitations skills training will be offered next fall.

Scope of Impacts: State Specific

Key Themes: Home-Based Business Education, Promoting Business Programs

Business Outreach on Community Radio: Doing Business is a monthly one-hour live radio show, produced and hosted by UMCE, that focuses on issues of small and home-based business owners in Maine. Small and home-based business owners often need to access business resources or create opportunities to learn from others. Our program offers a forum supported by on-air resources plus a printed resource packet to help listeners learn about available resources and how to access them. During the last year, 37 guests have participated on the show. Twenty-three of these guests have been home-based business owners, and 11 have represented business resource agencies. Each Doing Business broadcast reaches an estimated 3,000 listeners.

Summary of Impact: In a six-month post-program evaluation of listeners who requested a packet of resource materials, 20 percent reported that they called a business-assist agency or organization, and 20 percent said they told someone else about the resources available. One listener reported that, as a result of listening to the show, she started to write a business plan. Another listener reported that she changed her form of business ownership from a sole proprietorship to an S Corporation. A listener who is starting an import business said that the show on international trade was “tremendously helpful and I now know where to go to get more information.”

Scope of Impacts: State Specific

Key Themes: Home-Based Business Education, Jobs/Employment

Strengthening Maine’s Entrepreneurial Capacity: This year UMCE helped more than 4,000 Maine people to meet their small and home-based business needs through workshops, business clinics, individual consultations, publications and information. Nearly 1,200 people have attended our 120 business-related workshops and 400 people have received direct assistance through our small business clinic program held at county Extension offices across Maine. We have helped more than 900 existing small and home-based business owners access, understand and evaluate reliable information, enabling them to make informed decisions regarding their business enterprise.

Summary of Impact: UMCE’s Small and Home-Based Business Education Program has helped 500 Maine people start or grow small businesses during the past year. These businesses have added 67 new jobs to the Maine economy. We have also consulted with 37 clients who, after learning how to evaluate their business ideas, decided not to start a small or home-based business. Following are selected examples of how we have helped Maine people evaluate information and make informed business decisions:

A business owner and prominent community leader who wanted to significantly expand his business was referred to UMCE by a local banker. Our staff met with the client and helped him explore several financing and development options. As a result of this work, our client received financing to undertake the expansion. The expansion is under way; once completed, it is expected to create several additional jobs and improve the company’s profitability by 10 to 30 percent.

A small business owner operating in a rural region of Maine wished to expand his personal care business to accommodate increased customer demand for additional services and continue the growth cycle of the previous two years. UMCE conducted multiple meetings with the business owner, during which he gained an understanding of cash management and cash flow. A review of the client's cash flow projections revealed that he had greatly overestimated the market potential. Using consumer preference and demographic data provided by UMCE, the client acknowledged that his figures were in error and undertook a more realistic revision. The revised projections revealed the expansion potential to be marginally profitable at best. As a result, the client chose not to pursue expansion. Owners of a small organic blueberry farm located in an economically depressed, rural region of Maine attended UMCE's small business clinic and pricing workshop with the suspicion that their current pricing strategies were not providing them with adequate profit to expand their business. In consultation following the workshop, production and marketing costs were reviewed, which revealed that the products were significantly under priced. Further consultation defined a revised pricing strategy that helped increase this year's profits by an estimated \$2,500.

Scope of Impacts: State Specific

Key Themes: Home-Based Business Education, Jobs/Employment

Opening Island Markets to Maine Farmers: UMCE and our partners from the Women's Agricultural Network helped a Maine farmer write a grant to establish a farmers' market on the island of Islesboro. The island, located in Maine's Penobscot Bay and accessible only by boat or public ferry, has minimal tillable soil, which greatly limits its residents' ability to grow produce. Consumers must travel to the mainland for fresh produce. In addition, Islesboro's year-round population of just over 600 expands to 1,800 during the summer, providing a captive market for farm products.

Summary of Impact: As a result of receiving grant writing mentoring and support, the farmer applied for and received an agricultural development grant from the Maine Department of Agriculture, Food and Rural Resources. The grant helped underwrite the formation of a weekly farmer's market on the island, operated by a cooperative of mainland farmers. Based on farmer experiences at other Maine farmers' markets, they project annual summer gross sales of \$12,000.

Scope of Impacts: State Specific

Key Themes: Home-Based Business Education, Jobs/Employment

Mid-Coast Home-Based Business Conference: UMCE collaborates with volunteers from home-based businesses and business-assist organizations to plan, promote and conduct an annual conference for home-based businesses. The Mid-Coast Home-Based Business Conference has grown to become an integral part of the business community in Maine and has met the needs of nearly 1,000 citizens. In 2002, our sixth year, we attracted nearly 200 participants from Maine and New Hampshire to 43 business workshops and a business-to-business trade show featuring resources useful to micro-businesses.

Summary of Impact: Recently a survey was sent to 64 people who had attended two or more conferences between 1999 and 2002. Forty-eight percent of the surveys were returned. Most respondents were operating a home-based business with up to four employees. Seventy percent of respondents reported that the conference had increased their knowledge of owning a business. All respondents reported that conference participation had improved some aspect of their business, from improving skills to economic benefits. Forty-five percent reported that the conference helped them stay in business. Other benefits reported include:

- 52 percent had developed business goals
- 26 percent increased sales
- 19 percent increased profits
- 16 percent improved the bottom line
- 55 percent make more effective decisions
- 42 percent improved efficiency

One participant said, “I know my business has grown due to the knowledge I learned at the Mid-Coast Home-Based Business Conference. I think I would still be working from the dining room table and selling at (holiday) craft fairs instead of studio selling in artist co-ops and galleries.”

Scope of Impacts: Multi-state Extension: ME, NH

Key Theme: Home-Based Business Education

National Home-Based Business and Micro-business Design Team: UMCE’s business and economics specialist, as a member of the USDA’s National Home-Based Business and Micro-business Design Team, conducted a formal evaluation of an educational curriculum called *Cashing In on Business Opportunities: A Guide to Building a Home-Based/Micro-Business Extension Program*. The recently comprehensive revised 22-chapter curriculum covers a wide range of small business education topics and was designed for Extension educators who work with home-based and micro businesses.

Summary of Impact: Fifty-six of 106 current users of *Cashing In on Business Opportunities* and their clients completed our online survey. The results of the survey indicate that the curriculum is used widely and has resulted in increased knowledge of business management practices by both educators and clientele. Survey results indicate that 91 percent of the respondents use the curriculum as a resource, 57 percent to teach clientele, and 28 percent to train other educators. Seventy-three percent of the respondents indicated that the curriculum increased their clients’ business management skills to a great extent, and 65 percent indicated that their use of the curriculum helped them acquire new business management skills.

Scope of Impacts: Multi-State Extension; ME, UT, TX, WA, VA, KY, KS, and MI

Key Theme: Community Development

The Housing Circle: The Housing Circle is a three-year-old action project generated by the 1999 Maine Rural Development Council sponsored conference, *Building Partnerships with the Wabanakis*. The conference brought service

providers and tribal members together to address issues of concern the Maine tribes. The Housing Circle project addresses housing and infrastructure issues in five Maine tribal communities by providing financial assistance and a forum for discussions of economic development. The project offers a variety of presentations, including how to apply for housing loans and a seminar on the USDA Rural Development's self-help program. The Housing Circle project continues to attract new members and has the ongoing participation of 12 to 24 tribal, federal, state and private-sector partners.

Summary of Impacts : The Housing Circle project has created an inroad to more effective resource implementation for tribal communities and was instrumental in development of a financial package to build a much-needed tribal youth center on Passamaquoddy land at Pleasant Point, Maine. We have been successful at building relationships among federal partners such as the U.S. Department of Housing and Urban Development, USDA and U.S. Department of Veterans Affairs; and state housing agencies such as the Maine Department of Community and Economic Development and the Maine State Housing Authority. Public and private-sector relationships have also been enhanced as a number of banks now participate in the project.

Scope of Impacts: State Specific

Section B

Stakeholder Input Process

The University of Maine Cooperative Extension has an established process for soliciting stakeholder input in the development and assessment of research and Extension programs. In many instances this takes the form of project planning and implementing with stakeholders serving as partners and key members of focus groups, county boards and advisory groups. These selected examples illustrate our public input process:

- Each of Maine's county offices has a County Executive Committee made up of county citizens to provide advice and direction on priority programs. County educators meet with their County Executive Committee at least six times a year to evaluate and review programs and discuss current and future public issues, needs and programming.
- The University of Maine Board of Agriculture continues to provide counsel and advice to UMCE on our agricultural priorities. The board represents commodity groups, organizations, state government and related industries. During 2002, the board met twice and provided specific recommendations to the University regarding staffing, research initiatives and agriculture programming priorities in times of shrinking budgets.
- The Wild Blueberry Commission of Maine serves the needs of Maine's wild blueberry growers and processors and administers a state wild blueberry tax of over \$800,000 per year. The commission employs a full-time executive director and appoints the Wild Blueberry Advisory Committee, which is composed of six growers and/or processors who define research priorities and make research recommendations. The committee also evaluates proposals on the CSREES research grant of \$237,000 per year and recommends funding based on priority needs of the wild blueberry industry. UMCE's blueberry specialist meets with the Wild Blueberry Commission throughout the year and works with the commission to distribute the Wild Blueberry Newsletter.
- UMCE continues to offer Pesticide Applicator Training (PAT) for applicator licenses and relicensing credits for private and commercial applicators. Our activities are directed by the PAT Advisory Committee, a group that includes state agencies, pesticide distributors, professional applicators, educators and farmers. Approximately 175 individuals completed PAT training and over 250 individual pesticide recertification credits were given to farmers attending UMCE pesticide education programs in 2002.
- UMCE staff regularly meet with the Maine Potato Board, composed principally of potato farmers, to discuss priority issues and needs for Maine's potato growers. The Maine Potato Board education and research committee often supports UMCE research and Extension activities through grants. In 2002, the board defined priority needs with input from growers, processing interests, the Maine Department of Agriculture, Food and Rural Resources, USDA/Agricultural Research Service, the Maine Agricultural and Forest Experiment Station, Soil and Water Conservation Districts and UMCE. As a result, the board provided funding for a UMCE-produced growers' newsletter, as well as for evaluation of canola as a rotational crop, evaluation of growth

regulators and their potential to increase potato yields, a micronutrient survey and evaluation of the effects of paper fiber mulch on the water holding capacity of soil.

- The Maine Board of Pesticide Control is a group of seven individuals appointed by the governor to provide guidance for and input into UMCE's Pesticide Applicator Training program and our efforts in school and homeowner IPM programs. The board is made up of representatives from the forestry and medical industries, a commercial pesticide applicator, a private applicator (farmer/grower), a UMaine faculty member with a knowledge of IPM and two citizens with environmental expertise.
- The Forest Resources Advisory Committee (FRAC) includes representatives of forest resource agencies, organizations and businesses, and advises the forestry and wildlife departments of the UMaine College of Natural Resources, Forestry and Agriculture, with an emphasis on research and outreach. UMCE faculty are actively pursuing opportunities to enhance programming through collaboration as a result of recommendations and input from FRAC, and are supported in sustainable forestry education through FRAC grants.
- The Maine Master Gardener program targets homeowners, garden hobbyists, and small or part-time horticultural business owners. Program development input is obtained from across the state through an ongoing multiple needs assessment process. Included in this process are county Executive Committee advisory boards, current and past Master Gardener program participants, surveys from the general public and discussions amongst UMCE Home Horticulture staff. The Master Gardener/Home Horticulture team meets quarterly to review and refine the Master Gardener course and educational needs. This team establishes learning criteria, minimum competencies and volunteer expectations to create a consistent, statewide program.
- The Tanglewood 4-H Camp and Learning Center is advised by a board of directors composed of business leaders, educators, biologists, foresters and other civic leaders. The board participates in long-range strategic and financial planning, and this year raised over \$156,000 in support of youth programming at Tanglewood.
- The Pine Tree State 4-H Foundation works in partnership with UMCE to enrich youth experiences through the Maine 4-H Youth Development program and shares input received from funding recipients, stakeholders and supporters with UMCE staff. Foundation priorities are set by a board of trustees consisting of community and business leaders, 4-H volunteers and youth, all of whom have a strong commitment to youth development and the success of 4-H. The staff and trustees of the 4-H Foundation are actively engaged in joint work with UMCE through planning committees and task forces.
- The UMCE Senior Companion Program (SCP) Statewide Advisory Board gives advice and assistance to UMCE staff with the goal of moving SCP toward continued growth. The board consists of between 20 and 25 representatives from various health and aging agencies and public and private social service agencies, as well as elected officials, religious leaders,

community leaders, business leaders, educators and senior companions. The board supports the project director in forming statewide policy, as well as planning and developing operational procedures and practices consistent with program policies. Additionally the board seeks input to share with SCP from local advisory committees and SCP representatives.

- The Maine Rural Development Council (MRDC), an affiliate program of UMCE, regularly sponsors listening forums and community visitations to provide an opportunity for citizens, stakeholders and programmers to work together, listen and respond to each other's needs. In 2002, MRDC forums focused on rural community capacity building, rural entrepreneurship and place-based economic development. Assessing current and emerging issues were community leaders and representatives of Coastal Enterprises, Inc.; Eastern Maine Development Corporation; the Island Institute; Maine Centers for Women, Work and Community; the Maine Community Foundation; the Maine Department of Economic and Community Development; the Maine Departments of Transportation, Food & Rural Resources; the Maine State Housing Authority; USDA Rural Development; and the U.S. Small Business Administration. Community action agencies from coastal counties and members of the Maine State Legislature were also part of the visiting delegations. MRDC also addressed public issues and needs by working with Maine's four Native American tribal councils/governments representing Maine's tribal communities and with four isolated island communities.
- UMCE and Maine Sea Grant work together in a unique partnership to deliver educational programs and conduct applied research projects in coastal Maine relating to aquaculture, fisheries and ecosystem health. Marine Extension Team (MET) members have access to localized advice on programming via individual advisory committees that help direct the development of their individual plans of work. The advisory committees are generally made up of four to five stakeholders representing diverse backgrounds and often include community, industry and academic members. The process has proven to be an effective mechanism to help MET members be more effective in their work and have a broader sense of the needs of their constituents. One example is the Maine Shore Stewards Advisory Board, which has representatives from the Maine Coastal Program, the Maine Department of Environmental Protection, the Maine Department of Marine Resources, Maine Sea Grant and UMCE. This board advises the work of the water quality/phytoplankton coordinator and the statewide marine educator, enabling collaboration, communication, awareness and the sharing of methods, techniques and technical resources. The advisory board has a subcommittee that contributes to, and oversees the production of, a newsletter that is published three times a year and distributed to 3,100 individuals. Other examples include the Maine Phytoplankton Monitoring Program Advisory Board, the Maine Shore Stewards Advisory Board, the Maine Softshell Clam Advisory Council, the Merrymeeting Bay Advisory Committee, the Microbial Source Tracking Project Advisory Committee and the Education Advisory Committee of the Wells National Estuarine Research Reserve.

- The Maine Sea Grant Policy Advisory Committee helps set research priorities through the creation of guidelines for project funding and proposal review. The committee is made up of representatives from marine industry associations, state agencies, research institutions and educators.
- Cutting edge use of technology has allowed for more direct and continuous program feedback through online data capture relating to Maine Sea Grant and the Marine Extension Team programs. The technology allows staff to target specific client groups with needs assessment and program evaluation questions, in order to have timely feedback on programming.
- In community development, integrated approaches to involvement are critical where UMCE helps capture the breadth of needs but selectively addresses the segments relative to our mission and plan of work. Following a multi-stakeholder community planning effort in 1991 coordinated by UMCE, citizens of the four towns on Mount Desert Island published a detailed description of a “preferred future.” Over the next ten years, UMCE helped to organize a series of *Island Network Conferences* to frame issues and opportunities for action, resulting in the following successful projects:
 - *Kid’s Corner Day Care*, supported by employers and local government
 - *Island Connections*, a multi-purpose community organization assisting elders with daily needs
 - *Island Homes for Students*, providing temporary housing for high school students estranged from their families
 - *MDI Community Health Plan*, a health maintenance organization created by local employers and health care providers to promote health and manage insurance costs for employers and small businesses
 - *The Island Explorer*, a propane-powered bus system, which begins its third year of operation in 2002 with a million dollar grant from LL Bean, significantly reducing the use of private automobiles and reducing congestion and air pollution.

In 2002, nearly a decade after the initial community process ended, citizens again sought community development assistance from UMCE. Through initial meetings in the fall, *MDI Tomorrow* was established by citizens, government and representatives of local organizations to identify issues and frame a process for resolving them. Issues identified included community design and land use, transportation, housing, economic prosperity, community health and issues specific to youth. Recent meetings have included members of comprehensive planning committees from each town on the island. They have held an economic summit to attract bank and business leaders as well as citizens, and a panel of developers has addressed barriers and incentives to housing for middle-income residents.

UMCE learns directly and indirectly about stakeholders' issues and needs by collaborating with other agencies and organizations. Here are some of UMCE's collaborative efforts:

- The Maine Agricultural Center (MAC) is a partnership between UMCE and the Maine Agricultural and Forest Experiment Station. MAC's function is to promote, coordinate and manage joint faculty positions that support agriculture in Maine. MAC awards funds for faculty projects in Extension education and applied research that address the high priority needs of Maine agriculture. To date, over \$90,000 has been awarded. MAC leadership serves as staff to the University of Maine Board of Agriculture. This board is legislatively empowered to advise the Chancellor of the University of Maine System and the President of the University of Maine regarding the University's support of Maine agriculture.
- For the last seventeen years, UMCE has planned and hosted the Maine Potato Conference and Trade Show for producers and potato industry professionals. Choice of conference topics is driven by the participants through an annual needs assessment undertaken by the Maine Potato Board. Over a three-day period, attendees have the opportunity to attend numerous sessions that specifically address their highest priority needs.
- UMCE participated in a stakeholder feedback meeting hosted by the New England Pest Management Network to collect feedback from pest managers and other interested parties on programs of the EPA, USDA, state government regulatory agencies and Cooperative Extension programs in New England. The meeting was an open discussion covering many facets of pest management in New England. The agenda included opportunities to deliver feedback to regulatory agencies on past and planned programs, and to the New England Pest Management Network regarding plans for upcoming seasons.
- Maine was awarded funding through the EPA to improve water quality testing at saltwater swimming beaches and notify the public when problems arise. With this funding, the Coastal Swim Beach Monitoring Program was created as a joint effort of the Maine State Planning Office, UMCE, Maine Sea Grant, the Maine Department of Human Services, the Maine Department Environmental Protection, Maine Department of Conservation, the Department of Marine Resources and several municipalities.
- UMCE worked with representatives of the state's four ornamental horticulture industry trade associations to develop a liaison group called the Ornamental Horticulture Council. This year with the inclusion of the Golf Course Superintendent's Association the council represents all of Maine's relevant trade associations to the state legislature, helping to elevate legislators' awareness of issues surrounding pending legislation.
- During the past year, UMCE's small and home-based business team initiated or participated in over 40 collaborative and cooperative efforts across the state to better meet the needs of our small business customers. We also worked with other organizations to address important economic development issues around the state. Among others, we partnered with these organizations:

- Coastal Enterprises, Inc.
- Eastern Maine Development Corporation
- Kaufman Foundation
- Maine Centers for Women, Work and Community
- Maine Department of Economic & Community Development
- Maine Department of Agriculture, Food and Rural Resources
- Maine Department of Human Services
- Maine Resource, Conservation and Development Associations
- Maine Rural Development Council
- Maine Small Business Development Centers
- Margaret Chase Smith Center for Public Policy
- National Home-Based and Microbusiness Design Team
- Penquis Community Action Agency
- Piscataquis County Economic Development Council
- Service Corps of Retired Executives
- University of Maine at Augusta
- University of Maine Business College
- University of Maine Department of Industrial Cooperation
- University of Maine Department of Resource Economics & Policy
- University of Southern Maine Center for Entrepreneurship
- U.S. Department of Agriculture
- U.S. Small Business Administration
- Washington-Hancock Community Agency
- UMCE's 4-H Youth Development faculty and professionals are involved in many short-term and on-going collaborations with local and statewide youth-serving institutions, agencies and organizations. These collaborations have included schools, YM-YWCAs, Boys and Girls Clubs, Boy and Girl Scouts, FFA, recreation programs and youth centers, among others. Resulting programs have addressed issues such as bullying and teasing, valuing diversity, providing after school programs and character education. Conferences, workshops, interactive theater, small group discussions, curricula and fact sheets are just some of the many program delivery methods used by our youth and adult partners.

UMCE often responds to legislated educational needs in priority populations and subject areas:

- In 1997, the Maine state legislature mandated minimum reliance on pesticides through IPM. During 2002, over 700 commercial growers were involved in UMCE's IPM programs on strawberries, blueberries, cranberries, sweet corn, apples, potatoes and greenhouses, as well as for homeowners.
- This year the Maine state legislature mandated the formation of the IPM Council of Maine which will promote higher levels of IPM adoption among people through the state. Formed early in 2003, the IPM Council is comprised of stakeholders representing broad interests ranging from natural resource conservation to community IPM to agriculture and forestry. The group is administered jointly by the Maine Department of Agriculture, Food and Rural

Resources and UMCE, and is charged with identifying IPM priorities and goals for promoting and expanding IPM adoption in Maine.

- A UMCE educator has served on Maine's Nutrient Management Review Board since its creation in 2000. The board holds public meetings on appeals and variances to the recently enacted state law requiring a comprehensive nutrient management plan for all Maine dairy and livestock producers. This year the board made recommendations to the commissioner of agriculture and helped facilitate the dispensation of \$3.5 million in grant funds for producers to construct manure storage facilities and develop nutrient management plans. UMCE has taken the lead role in training producers as certified planners by writing the certification plan, training manual and tests; and in coordinating the development, testing and delivery of a computer program to assist producers in creating their own plans.
- The Maine state legislature addressed the issue of domestic animal welfare in Maine during 2001 with the creation of the commission. A UMCE faculty member specializing in livestock serves on the Maine Animal Welfare Commission, which addresses the funding of staffing and training as well as legal issues for the Maine Animal Welfare program and the state humane agents.
- UMCE, along with Department of Agriculture, Food and Rural Resources, offers semi-annual wood measurement workshops to enable participants to obtain Apprentice Wood Scaler licenses.
- For the second year, two UMCE pest management scientists have added their expertise as members of the state government task forces on West Nile virus.
- UMCE and the Maine Department of Agriculture, Food and Rural Resources are working to help Maine public schools design and implement an IPM program to minimize the pesticide exposure of school children, staff and the public on school properties and in their in-school greenhouses. This work will help schools comply with a new regulation by the Maine Board of Pesticide Control requiring IPM practice in schools.

Many other stakeholders have been included in our programs and processes, including the following (listed alphabetically):

Acadia National Park	Bigelow Laboratory for Ocean Sciences
Agricultural Council of Maine (AGCOM)	Blue Hill Heritage Trust
Androscoggin County Commissioners	Bucksport Community Concerns
Androscoggin County Extension Association	Bureau of Elderly and Adult Services
Androscoggin Healthy Families	Casco Bay Estuary Program
Androscoggin Home Care & Hospice	Catholic Charities of Maine
Aroostook Agency on Aging	Center for Marine Conservation
Aroostook County Commissioners	Central Maine Sheep Breeders Association
Aroostook County Community Action Program	Chewonki Foundation
Aroostook County Extension Association	Coastal Conservation Association
Bangor Area Visiting Nurses	Coastal Economic Development
Bangor State Fair Administration and Board	Coastal Swim Beach Committee

Cobscook Bay Fishermen's Association
Cobscook Bay Management Area Group
Cobscook Bay Resource Center
Communities for Children
Community Health and Counseling
Conservation Law Foundation
Cove Brook Watershed Council
Craig Brook National Fish Hatchery
Cumberland County Commissioners
Cumberland County Extension Association
Darling Marine Center
DMR Lobster Zone Management Committees A
and B
Down East Community Hospital
Downeast Institute for Applied Marine Research
and Education
Downeast Lobsterman's Association
Eastern Area Agency on Aging
Eastern Association of Veterinarians in
Aquaculture
Eastport Health Care Center
Eleanor Widener Dixon Memorial Clinic
First Congregational Church of Calais
First Congregational Church of North Anson
Franklin County Commissioners
Franklin County Extension Association
Friends of Acadia
Friends of Casco Bay
Friends of Medomak Watershed
Georges River Shellfish Management
Committee
Good Shepherd Food Bank
Governor's Task Force on Fishing Vessel Safety
Great Works Watershed Coalition
Gulf of Maine Aquarium
Gulf Of Maine Council on the Marine
Environment
Gulf of Maine Expedition Board
Gulf of Maine Ocean Observing System
Gulf of Maine Research Collaborative
Hancock County Commissioners
Hancock County Extension Association
Healthy Families Maine Network
Holt Research Forest
Indian Township
Islesboro Island Trust

Kennebec County Commissioners
Kennebec County Extension Association
Kennebec Plaza
Knox County Children's Services
Knox County Commissioners
Knox County Extension Association
Laudholm Trust
Lincoln County Commissioners
Lincoln County Extension Association
Lobster Conservancy
Lobster Zone Management Council
Maine Agricultural and Forest Experiment
Station
Maine Agricultural Center
Maine Alternative Poultry Association
Maine Aquaculture Innovation Center
Maine Beef Industry Council
Maine Beef Producers Association
Maine Beef Producers Council
Maine Bureau of Mental Health
Maine Bureau of Parks and Lands
Maine Center on Aging
Maine Children's Task Force
Maine Coalition on Aging Initiative
Maine Coastal Program
Maine Correctional Center
Maine Cranberry Growers Association
Maine Dairy and Nutrition Council
Maine Dairy Industry Association
Maine Dairy Promotion Board
Maine Deer and Elk Producers Association
Maine Department of Conservation
Maine Department of Education
Maine Department of Environmental Protection
Maine Department of Human Services
Maine Department of Inland Fisheries and
Wildlife
Maine Department of Labor
Maine Department of Professional and Financial
Regulation
Maine Division of Quality Assurance and
Regulations
Maine Environmental Education Association
Maine Fair Association
Maine Farm Bureau
Maine Fish Health Technical Committee

Maine Fishermen's Forum Board	New England Regional Monitoring Committee
Maine Forest Service	New England Vegetable and Berry Growers Association
Maine Geological Survey	NOAA Habitat Restoration
Maine Greenhouse Industry Growers	North Atlantic Marine Alliance
Maine Humanities Council	Northeast Aquaculture Conference and Expo Planning
Maine Island Trail Association	Northeast Consortium
Maine Landscape and Nursery Association	Northeast Loggers' Association
Maine Lobsterman's Association	Northeast Regional Aquaculture Center
Maine Maple Producers Association	Northeastern Regional Aquaculture Center's Technical Industry Advisory Council
Maine Marine Trades Association	Northwest Atlantic Marine Alliance Board of Trustees
Maine Math and Science Alliance	Notre Dame De Lourdes
Maine Parent Federation	Orono Land Trust
Maine Phytoplankton Monitoring Program Advisory Board,	Oxford County Commissioners
Maine Science and Technology Foundation	Oxford County Extension Association
Maine Sea Urchin Zone Council and Lobster Zone Council D	Partners for Ending Hunger
Maine Seacoast Mission	Penobscot Bay Marine Volunteers
Maine Shore Stewards	Penobscot Bay Network
Maine Shore Stewards Advisory Board	Penobscot County Commissioners
Maine Softshell Clam Advisory Council	Penobscot County Extension Association
Maine State Department of Inland Fisheries and Wildlife	Penobscot River and Bay Institute
Maine State Florists and Growers Association	Penobscot River Keepers
Maine State Legislature	Piscataquis County Commissioners
Maine State Planning Office	Piscataquis County Extension Association
Maine State Pomological Society	Pleasant Point Preservation Committee
Maine State Prison Farm	Professional Employees Advisory Council
Maine Tele-Medicine Service	Sagadahoc County Commissioners
Maine Urchin Harvester's Association	Sagadahoc County Extension Association
Maine Vegetable & Small Fruit Growers Association	Salvation Army
Marine Conservation Center	Sea Urchin Zone Council
Marine Explorers Club	Sebasticook Valley Hospital
Meals for ME	Senior Spectrum
Merrymeeting Bay Advisory Committee	Shore Stewards Collaborative
Microbial Source Tracking Project Advisory Committee	Small Woodland Owners Association of Maine
Mount Desert Island Biological Laboratory	Somerset County Commissioners
National Sea Grant Extension Growth Committee	Somerset County Extension Association
Natural Resources Conservation Service	Southern Kennebec Child Development Corporation
Nature Conservancy	State of Maine's Beaches Conference Steering Committee
NE Farmed Fish Health Management Workshop Planning Committee	Stonington Fisheries Alliance
New England Floriculture, Inc.	Sunrise County Home Care Services
	Sustainable Agriculture Society

Town of Baileyville
United Way of Maine
University of Maine Research Council
USDA Infectious Salmon Anemia Standards
Committee
Waldo County Commissioners
Waldo County Extension Association
Walker Trust Foundation
Washington County Commissioners
Washington County Extension Association
Wells National Estuarine Research Reserve
Wells National Estuarine Research Reserve,
Education Advisory Committee
Western Maine Community Action
Western Mountains Alliance
Wild Blueberry Growers Association
Wolfe's Neck Farm Foundation
Women's Agricultural Network
York County Commissioners
York County Extension Association
York Cumberland Housing
York Wellness Council

Section C

Program Review Process

There have been no changes to the Program Review Process for the 2000–2004 Plan of Work. In the Plan of Work the process is titled *Merit Review Process*.

Section D

Evaluation of Multistate, Multi-Institutional, Multidisciplinary and Joint Research and Extension Activities

During 2002, our efforts to deliver practical, research-based information to the citizens of Maine was enhanced in many ways through collaborative efforts with other institutions and out-of-state partners, and through a combination of traditional and nontraditional disciplines. Our partnerships helped our staff and clients to expand their knowledge base and efficiencies where common work merited. Many of our outreach efforts provided direct connections between practical, usable information and the research that helped produce it.

Multistate Extension

Agricultural Composting: The UMCE Compost School was established in 1997 to provide for training of compost facility owners, managers, operators and consultants in establishing and operating large-scale commercial composting facilities. The school is a collaboration among UMCE; the Maine State Planning Office; the Maine Department of Agriculture, Food and Rural Resources; and the Maine Department of Environmental Protection. This year our school addressed the emerging need for agricultural composting facilities in response to new state nutrient management legislation and restrictions on spreading raw animal manures. On-farm composting operations utilize and help dispose of organic residues from processing facilities, such as fish and seafood waste, as well as those generated on the farm. For every 1,000 c.u. yards of compost produced, a farmer can realize an additional income of approximately \$15,000. This year 40 agricultural producers from seven states completed UMCE's agricultural composting school.

Tri-state Initiative for Integrated Pest Management in Public Schools: Our pest management scientists and the Maine Department of Agriculture, Food and Rural Resources are working to help Maine public schools design and implement an IPM program to minimize the pesticide exposure of school children, staff and the public on school properties and in their in-school greenhouses. We are delivering on-site IPM training sessions for maintenance personnel at pilot schools in Maine, and work as part of a Maine, New Hampshire and Vermont tri-state initiative to accomplish the same in all three states. The publication we have produced to support the effort,

Outdoor Integrated Pest Management for Schools, will be distributed to all school districts and individual school properties.

Seafood Hazard Analysis Critical Control Point (HACCP): UMCE is a working partner of the Northern New England Seafood Alliance, which defines processing standards that reduce the risk of microbiological contamination for seafood processors. More information is available on page 13.

National Home-Based Business and Micro-business Design Team: During the past year, UMCE has participated as a member of the USDA's National Home-Based Business and Microbusiness Design Team. More information is available on page 51.

Earth Connections Camps: Over 1,000 youth participated in 4-H Earth Connections summer and school overnight programs offered by UMCE during 2002. Campers came from 17 states and 8 countries. More information is available on page 33.

Multistate Extension and Multi-Institutional Extension

New England Vegetable and Berry Growers Association: Vegetable and berry crop specialists from five New England states and New York cooperated with the New England Vegetable & Berry Growers Association to develop the 2001 New England Vegetable and Berry Conference held in Sturbridge, Massachusetts. The steering committee for the conference included representatives of the farming community as well as Extension and industry representatives, to ensure that the educational programs addressed the needs of the growers in the region. Educators, including experienced growers from other regions, were brought in to share their experiences and offer possible solutions to current industry challenges. A special effort was made to address the informational needs of organic farmers. The conference offered more than 120 educational sessions over the three days. More than 105 agricultural companies participated in a farm trade and equipment exhibition developed to put small farmers directly in touch with the latest technologies. Total attendance for the conference was 1,423 people.

Regional Dairy In-service: UMCE participates in the planning and delivery of the Northeast Dairy Specialists Regional Dairy Extension In-service Training program each year. This was the fourth year of the workshop which focused on dairy nutrition, herd health, labor management and profitability. The event is supported in part by a technology grant as part of the Mid Atlantic Kellogg project and includes participants from across the northeast.

National e-Extension Initiative: Three UMCE staff members attended one of four regional meetings on the concept of e-Extension, a strategy to develop a national on-line information and education network as part of the national Cooperative Extension system. Our staff joined representatives from several other states to learn more about the vision of e-Extension and respond to specific questions about the concept. Small

group discussion was focused on four basic questions over an eight hour period. The four primary areas of discussion were:

- audience, needs assessment and marketing,
- e-Extension components/characteristics,
- management and business plan, and
- issues, barriers and potential solutions.

Our participation has helped us become more informed about the scope and potential of this initiative and expand our understanding of the local, regional and national issues involved.

Joint Research and Extension

Irrigation Research and Extension: This year UMCE held training programs and conducted applied research to help potato growers understand methods of irrigation and soil water loss reduction. In 2002 we held the *Winter Extension Irrigation Symposium* in northern Maine. More information is available on page 31.

Soluble Nitrogen From Food-Processing Waste: Lack of a reliable soluble nitrogen source for organic fruit and vegetable production is often a limiting factor for organic producers. Two UMCE faculty members worked in collaboration with an organic fruit and vegetable grower in Dresden, Maine to research food processing waste as a potential source of soluble nitrogen for organic vegetable production. The project brought processing waste from sardine and baked bean canning operations to be evaluated in replicated trials at the Maine Agricultural and Forest Experiment Station's Highmore Farm and the grower's farm in Dresden. Funding was provided by the Maine Agriculture Center. Preliminary data is being evaluated; the project will continue by evaluating the cash crop productivity in 2003.

Volunteer Potato Research Trial: UMCE is conducting an on-farm applied research study to evaluate the best control for unwanted volunteer potatoes. Volunteer potatoes sprout during rotational crop years and have the potential to spread potato disease. The results were distributed to potato growers and agricultural products representatives. More information is available on page 30.

Apple Cultivar Evaluation: UMCE and the Maine Agricultural and Forest Experiment Station have completed an apple cultivar evaluation for several varieties of apple, assessing firmness and flavor before and after storage. Results of the research were distributed to apple growers at a summer Experiment Station tour, and are available on-line.

Native Woody Plants for Managed Landscapes: This year UMCE and UMaine began working in a 5 year project to evaluate the suitability of 41 native Maine woody plants for managed landscapes. Plants have been installed at seven evaluation sites to test for cold hardiness, pest resistance, growth potential and tolerance to browsing. First year evaluations of plant performances are being evaluated. All

plantings are designed to be used as a tool for teaching about landscaping with native woody plantings.

Biological Fly Control: UMCE, the Maine Agricultural Center and the Maine Department of Agriculture, Food and Rural Resources completed a research project assessing the use of parasitic wasps as a method of fly control in dairy barns. On-farm demonstrations were conducted with four organic dairy farms and results were presented at the Maine Agricultural Trade Show in January 2003. Workshops will be delivered through the Maine Organic Farmers and Growers Association and a fact sheet has been produced.

Detection Capability For The Blueberry Spanworm: UMCE, the Maine Agricultural and Forest Experiment Station and the UMaine Department of Biological Sciences are working together on a research project to develop prediction capability for the blueberry spanworm, a destructive pest of the lowbush blueberry. To date, the project has developed a predictive model for spanworm egg hatch using laboratory data. Project staff devised a Web-based, user-friendly computer program that uses soil temperatures to help blueberry growers predict egg hatch timing. The final component of the project will be to validate laboratory data in the field, and will be completed in the spring of 2003.

Post-Retail Fertility Management of Hanging Baskets: Research was completed by UMCE and the UMaine Department of Animal and Horticultural Sciences to determine the best fertilizer and application rate at the lowest cost for season-long performance in *Scaevola* 'New Wonder'TM hanging baskets. The information will benefit post-retail consumers. Results will be presented to greenhouse operators and retail garden centers at the 2003 Annual Conference of the American Society for Horticultural Science.

Production Protocol For Greenhouse Producers: UMCE and the UMaine Department of Plant, Soil and Environmental Sciences worked together in a research project funded by the Maine Agricultural Center to assess phosphorus fertilizer application rates for *Scaevola aemula*, a new and popular container plant grown by greenhouse producers for landscapers and homeowners. The project is designed to help the greenhouse producers keep up with production protocol for this new plant and allow them to maintain quality based on the most current production research. The project determined that a reduced level of phosphorus yielded superior plants. The information was shared through a presentation at the American Society for Horticulture Science 2002 annual meeting, and with growers at a summer field day. As a result of this project, fertilizer costs will be reduced, environmental contamination by high levels of phosphorus application will be reduced, and the crop quality of *Scaevola aemula* will be increased.

Sea Urchin Summit: UMCE and Maine Sea Grant were asked by the Maine Department of Marine Resources to organize and facilitate a summit meeting that would bring together fishermen, processors, scientists and regulators to explore new

ways to manage Maine's struggling sea urchin fishery. The summit produced revisions in the sea urchin research funding process and resulted in a specific research project to help filter out undersized, immature urchins during the harvesting process. More information is available on page 35.

Profile Monitoring: UMCE and Maine Sea Grant are partnering with the Maine Department of Conservation's Bureau of Geology and Natural Areas, UMaine and the Maine Coastal Program to gather data on changes occurring on Maine's beaches. The information is used to guide beach management and planning for federal, state and community use. More information is available on page 34.

Wood Pellet Bedding for Equines: UMCE educators completed a research project funded by the Maine Agricultural Center that measured manure outputs of horses using different bedding materials—traditional fresh sawdust bedding and a new pelleted wood bedding product. The premise is that the wood pellets are able to absorb much more than regular bedding material. Research showed that there was a reduction in weight of an average of 15 pounds per day per horse of manure generated by the horses bedded with the pelleted bedding reducing the amount of horse manure generated per animal by 36 percent or 5.4 cubic yards per year.

Small and Independent Grocery Stores In Maine: UMCE and UMaine are participating in a four-year USDA Fund for Rural America funded project focusing on small and independent grocery store retailing in rural Maine. The project will gather information about consumer preferences and develop new networks that could benefit small and independent grocery stores in Maine and across the country. During our first year an advisory team was formed, a statewide survey of grocery store managers was conducted, an assessment of retail trade vitality was made of Maine communities, a price survey was conducted of selected Maine grocery stores, and eight Maine communities were selected for in-depth study.

Multi-Institutional Extension and Joint Research and Extension

Genetic Resistance to Internal Parasites in Sheep: The Northeast Katahdin Hair Sheep Project is a four-year Sustainable Agriculture Research and Education grant funded project involving UMCE, Bowdoin College and a consulting team of sheep producers. The project is in its third year and is working to study and further develop a breed of hair sheep known as the Katahdin. Hair sheep benefit producers because they are lower maintenance and produce a milder-tasting meat than traditional woolled sheep. It is hoped that this improved breed will be useful and profitable for small farms as a sustainable agriculture enterprise in the 12-state northeast region. This year the project added an additional research component: defining of the biology of the Katahdin for parasite resistance and creating an on-farm testing process for identifying resistant animals. The study has identified and bred animals from Maine, Florida, Mississippi and Louisiana that have a natural resistance to parasites and will allow producers raise animals without chemical treatments. This will lower costs and allow them to market breeding stock and meat animals as organic.

Clam Industry Builds Research Capacity: UMCE and Maine Sea Grant have worked together with the Maine Department of Marine Resources (DMR) and researchers from Maine Maritime Academy and the University of Maine at Machias to build research capacity within the local clam harvesting industry. Together they have undertaken an applied research project that can enhance the potential harvest of clams in typically unproductive clam flats. More information is available on page 35.

Multistate Extension and Joint Research and Extension

PRO New England (Pest Management Resources Online for New England): PRO New England is a cooperative effort of six New England Extension pest management programs (CT, MA, ME, NH, RI, VT) that produce pest management information for their regional growers. The Web site is meant to increase access to current pest management news and research-based information and promote pest management practices for New England that are effective, economical, environmentally-sound and socially-sensitive.

Regional Potato School: UMCE water quality and crops specialists created a multistate potato school, bringing their combined expertise to Maine potato growers and Extension programs in Massachusetts and in Vermont. The goal of the school was to improve grower efficiency and effectiveness by addressing the critical issues of pest control, storage management and production. Post-program evaluations indicated that 100 percent of the attendees responding felt that the delivery of research-based information to regional potato growers to improve their ability to make informed decisions concerning their business was accomplished.

Pickling Cucumber Variety Performance: UMCE and the Maine Agricultural and Forest Experiment Station worked together to complete a trial of seven different pickling cucumber varieties. Each variety was evaluated for its fresh quality characteristics, and thus its potential for retail production as both a pickling and a slicing cucumber in northern New England. The varieties were evaluated for yield, shape, color and disease resistance. The results of the project were presented to the annual meeting of the Maine Vegetable and Small Fruit Growers Association in January of 2002, the New England Vegetable and Berry Growers Association, and published in the Maine Master Gardener News.

Microbial Source Tracking: Unidentified sources of contamination from fecal coliform bacteria in southern Maine estuaries pose a threat to public health and the economies of coastal communities. These bacteria contaminate productive clam flats and result in the closing of swimming beaches. To address the issue, UMCE and Maine Sea Grant have partnered with the Wells National Estuarine Research Reserve, the Jackson Estuarine Lab at the University of New Hampshire, the University of Southern Maine and the Maine Conservation Corps/AmeriCorps program in a two-year effort to conduct water quality and microbial source tracking (MST) analyses. They will attempt to identify the hosts of fecal coliform bacteria, develop remediation plans and conduct community outreach aimed at reducing contamination levels. At

the end of the project's first year, 24 highly trained volunteers have collected field samples and/or assisted with lab procedures, providing scientists with the material needed to conduct MST analyses, which are underway. Additionally, through the cooperative efforts of staff, this project has become linked to a larger network of scientists conducting similar studies throughout the country, which benefits the project by providing for exchange with experts, technicians and resource people who are also working to assess the efficacy of various microbial source tracking techniques.

Multistate Extension, Multi-Institutional and Joint Research and Extension

European Corn Borer (ECB) has become a major pest problem for potato growers in parts of Maine, damaging crops and reducing potato yield. Their populations and range have recently increased dramatically in northern Maine. UMCE has increased efforts to monitor and model this pest within its existing areas of infestation and potential range, and to help farmers manage crop damage through minimized pesticide treatments. We are also participating in a joint project with the University of Maine Agricultural Experiment Station and Cornell University to explore the use of biocontrol to manage ECB populations in potatoes. More information is available on page 30 – *Potato Integrated Pest Management Program*.

Multi-Institutional Extension

Building Vibrant Communities: The Maine Rural Development Council and the Maine Rural Health Association cosponsored the joint annual forum, *Building Vibrant Communities: Linking Rural Health and Economic Development*, bringing together Maine healthcare and community development professionals. Working partners in the project included the University of Southern Maine Muskie School of Public Service, the Maine Hospital Association, the Sustainable Development Working Group, Acadia Health Education Coalition, Rocky Coast Consulting and the Maine Bureau of Health's Office of Rural Health and Primary Care. Healthcare and community development sector participants focused their attention on the benefit that healthcare has on economic development and with under-served populations in rural areas. Conference participants defined current issues confronting their work, explored strategies and policies for addressing these issues, and built partnerships on the state and local level. Follow-up work has occurred in the rural health policy arena, and demonstration projects are planned for local community teams.

Fisheries and Climate Change Symposium: UMCE worked with the College of the Atlantic to help plan and present a symposium addressing the potential effects of climate change on local fisheries and coastal communities as defined by the *Climate Change Action Plan*, recently adopted by the Conference of New England Governors and Eastern Canadian Premiers. The action plan indicates that the Gulf of Maine may face major alterations that will profoundly affect marine fisheries and their communities. Symposium presenters included university and government scientists from Maine and other coastal states who examined conflicting demands for coastal

the margin from non-fishery uses; expansion of aquaculture; depressed fisheries stocks; changes in water temperature, ocean currents and species distribution; pollution, algal blooms, disease, biotoxins; and invasive alien species. This symposium is intended to serve as a first step towards applying principles adopted by the action plan for the citizens of mid-coast Maine.

Multidisciplinary Extension

Dairy Goat Profitability: Seal Cove Farm is the largest dairy goat farm in Maine, and a manufacturer of value-added cheese products that are marketed in specialty food shops and supermarkets throughout New England. The owner contacted UMCE because she was contemplating large capital purchases and was concerned that the business might not support the additional debt. UMCE business management and livestock educators worked together to help the owner with a number of production, pricing and marketing issues and helped to develop a spreadsheet that the owner could use to calculate the farm's cost of producing cheese. A two-year plan was implemented to improve farm profitability, which included controlling production costs, establishing a profitable market price for each product, phasing out the least profitable product lines and increasing production of the most profitable products. Three months into the plan, the owner had made significant progress, indicating that the changes she had made will increase farm profits annually by more than \$18,000, enabling her to make the capital purchases to improve the farm's efficiency.

The Maine Coastal Swim Beach Program: Maine was awarded funding through the EPA to improve water quality testing at saltwater swimming beaches and to notify the public when problems arise. With this funding, the Coastal Swim Beach Monitoring Program was created as a joint effort of the Maine State Planning Office, UMCE, Maine Sea Grant, the Maine Department of Human Services, the Maine Department Environmental Protection, Maine Department of Conservation, the Department of Marine Resources and several municipalities. UMCE and Maine Sea Grant are leading the efforts to organize citizen groups to monitor swim beaches for waterborne bacteria found in fecal contaminated waters that cause illnesses, and to educate the public about preventing the spread of recreational water illnesses. We have achieved successful recruitment for five targeted community groups participating in the program this year who have monitored beaches for the three-month usage period, assuring public health. Educational materials were developed to help communities and beach goers change practices affecting water quality.

Working Landscapes: UMCE is working with partners in a project to increase agricultural viability and promote sustainable communities by maintaining a diverse landscape and economy. The project promotes sustainable agricultural practices and access to healthier food sources for communities. More information is available on page 7.

Section E
Integrated Research and Extension Activities: Multi-state
U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
 Supplement to the Annual Report of Accomplishments and Results
 Multi-State Extension Activities and Integrated Activities
 (See Summary of Multi-State Activities in Section D)

Institution: University of Maine Cooperative Extension
State: Maine

Check one:

- Multi-State Extension Activities**
 Integrated Activities (Hatch Funds)
 Integrated Activities (Smith-Lever Act Funds)

Actual Expenditures

Title of Planned Program/Activity	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
<u>New England Consortium Activities</u>					
<u>-Faculty/Staff Time on New England Activities</u>	<u>\$40,383</u>	<u>\$60,381</u>	<u>\$76,911</u>		
<u>-Additional Staff Time on New England Activities</u>	<u>\$20,825</u>				
<u>-Additional Staff Time on Multi-State Activities</u>	<u>\$93,178</u>	<u>\$136,936</u>	<u>\$72,692</u>		
<u>Total Multi-State Activity Expense</u>	<u>\$154,386</u>	<u>\$197,317</u>	<u>\$149,603</u>		

Lavon L. Bartel February 25, 2003
Director **Date**

Section F
Integrated Research and Extension Activities: Integrated
U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
 Supplement to the Annual Report of Accomplishments and Results
 Multi-State Extension Activities and Integrated Activities
 (See Summary of Integrated Activities in Section D)

Institution: University of Maine Cooperative Extension
State: Maine

Check one:

- Multi-State Extension Activities**
 Integrated Activities (Hatch Funds)
 Integrated Activities (Smith-Lever Act Funds)

Actual Expenditures

Title of Planned Program/Activity	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
<u>Contribution to Maine Agricultural Center</u>	<u>\$20,000</u>	<u>\$25,000</u>	<u>\$25,000</u>	<u> </u>	<u> </u>
<u>Faculty with Joint Extension/Research Appointments</u>	<u>\$129,718</u>	<u>\$179,596</u>	<u>\$282,042</u>	<u> </u>	<u> </u>
<u>Faculty Engaged in Integrated Activities</u>	<u> </u>	<u> </u>	<u>\$109,289</u>	<u> </u>	<u> </u>
<u>Administrative Support</u>	<u> </u>	<u> </u>	<u>\$42,391</u>	<u> </u>	<u> </u>
<u>Total Integrated Activity Expense</u>	<u>\$149,718</u>	<u>\$204,596</u>	<u>\$458,722</u>	<u> </u>	<u> </u>

Lavon L. Bartel February 25, 2003
 Director Date